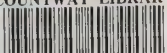
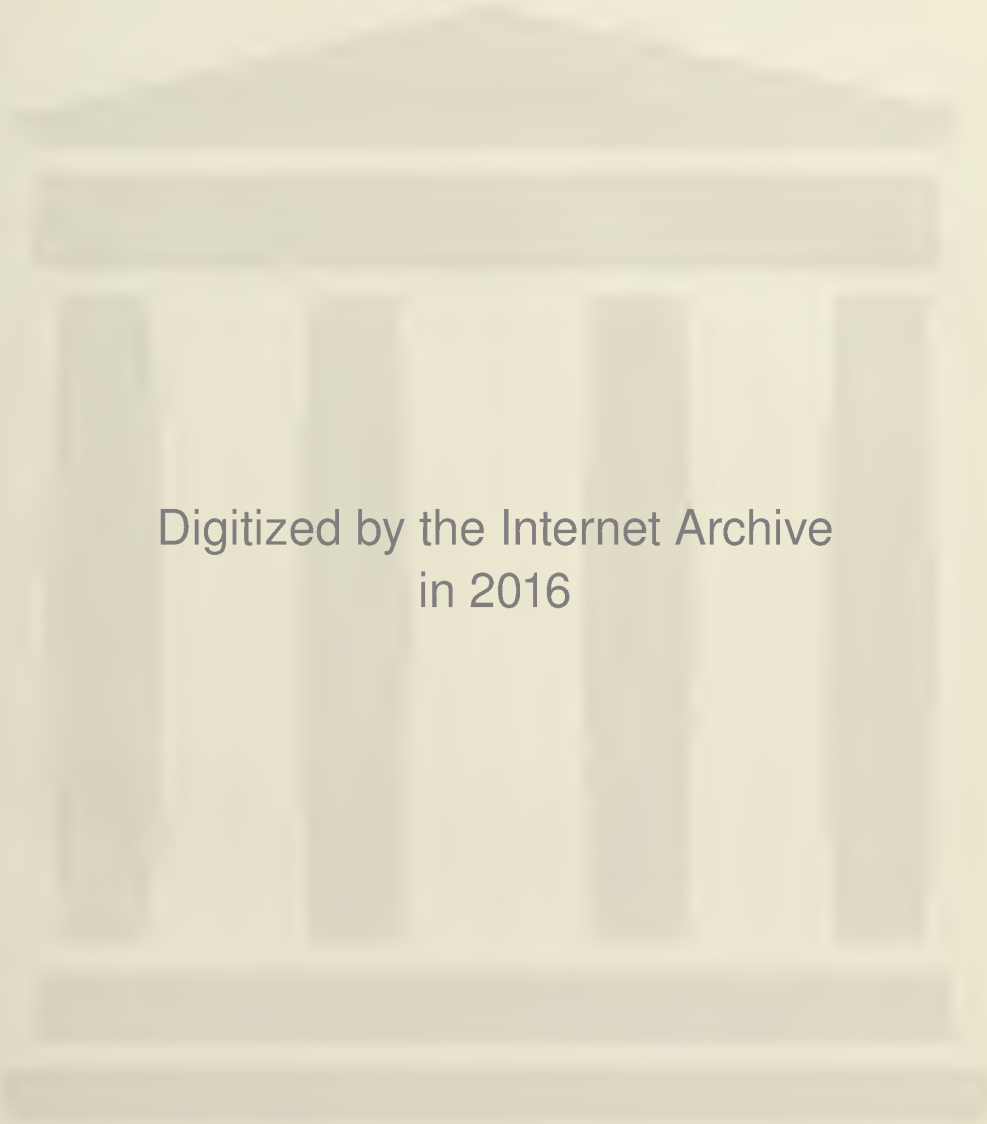


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THE JOURNAL

of

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Loose Stools in Infants

require extra diapering, and inconvenience the mother

Clinically, loose stools are accompanied by a dehydration which, when excessive or long continued, interferes with the baby's normal gain. A long-continued depletion of water is serious, since "the fluid requirements of an infant are tremendous. A normal infant 15 pounds in weight will frequently excrete as much as one litre of urine per day. A negative water balance for more than a very short period is incompatible with life." (Brown and Tisdall)

Moreover, when the condition is superimposed by chance infection, the delicate balance may be seriously upset, since the infant's reserves have already been drawn upon, so that resistance to infection and dangerous forms of diarrhea may be too low for safety. Every physician dreads diarrhea, which Holt and McIntosh call "the commonest ailment of infants in the summer months."

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THE TREATMENT OF CONGESTIVE HEART FAILURE*

By
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The majority of forms of chronic heart disease, angina pectoris excepted, tend to produce the symptom complex known as congestive heart failure. This syndrome includes those manifestations, namely, dyspnea, cough, and rales at the lung bases, which are dependent on congestion of the lungs, as well as the signs, i. e., venous distention, cyanosis, hepatic engorgement and dropsy, which are brought about by congestion of the systemic vascular bed. The disorders which produce this clinical syndrome progress through several well defined stages and treatment depends on the stage of the patient's illness.

1. *Potential cardiac disease.* This term may be applied to individuals who are free of all signs of disease of the heart but who have or have had disorders which may produce cardiac complications at some time in the future. Persons who have had rheumatic fever or chorea, individuals with hypertension, middle-aged persons with syphilis and subjects with hyperthyroidism may be considered as having potential heart disease. In such patients the heart requires no treatment, but frequent examinations are indicated in order to detect cardiac complications should they arise.

2. *Asymptomatic cardiac disease.* This phase designates persons who are free from objective complaints referable to the heart, but who have definite objective signs of cardiac disease. The most common of such signs are enlargement of the heart, di-

astolic and presystolic murmurs. The appearance of one or more of these manifestations means that the heart is definitely abnormal and the problem is the prevention of the development of the more advanced stages of the malady. In this regard three considerations are of primary importance. In the first place infection should be avoided. The patient should be kept away from persons with colds and other respiratory infections, and should follow the dictates of common sense as regards proper clothing, exposure to cold and wet weather, and sleeping in drafts. Secondly, undue physical and mental stress should be avoided. Mild or moderate exercise may be beneficial and participation in sports may be permissible, but violent exertion is contraindicated. In general, exertion which does not produce shortness of wind is harmless, but exercise which brings on dyspnea should be avoided. In the third place, the nutritional state is of importance. Marked undernutrition renders the subject susceptible to infections, whereas obesity imposes an unnecessary strain on the heart.

3. *The stage of limited cardiac reserve.* This term designates the condition in which dyspnea is produced by mild or moderate exertion, but is not present at rest. The aim of treatment is to prevent the development of dyspnea at rest and of other symptoms of congestive failure. This is the stage in which most patients first consult a physician. The measures mentioned in regard to the treatment of asymptomatic cardiac disease should be rigidly enforced, and particularly those concerned with the prevention of infections. When, in spite of these precautions, infections do occur they should be treated by prolonged bed rest. The so frequently occurring cough should be checked by codein, for coughing is a form of rather violent muscular exertion. When the minimal activity which is compat-

*Presented to the Talladega County Medical Society at its December 1933 meeting.

ible with the patient's leading a happy and economically useful life produces dyspnea, digitalis is indicated. The drug should be administered in the form of the powdered leaf, either in pills, tablets or capsules (The tincture of digitalis is still widely used despite its many disadvantages. It is unstable and the dose is not usually accurately measured). For a patient of average size the drug should be given as follows: For the first three days, nine grains daily in three divided doses. Thereafter, three grains daily indefinitely. If signs of intoxication, as revealed by nausea, vomiting or coupling of the heart beats develop, the drug should be discontinued for twenty-four hours and a smaller daily dose should then be resumed. Ordinarily, once digitalis has been needed it should be continued for the rest of the patient's life.

4. *The stage of left ventricular failure.* Most patients eventually develop dyspnea at rest, which is dependent on engorgement of the lungs due to the failure of the left side of the heart. The symptom usually occurs in seizures which are most frequent during the night. Such attacks can often be prevented by the restriction of fluids in the latter part of the day and by taking small evening meals, evacuation of the bowels and the bladder before retiring, the use of sedatives at bedtime, and by avoiding undue physical and emotional stress during the day. When, in spite of such precautions, seizures of nocturnal dyspnea occur, they should be treated by the administration of morphine, which will usually stop the attack. If pulmonary edema, as revealed by the expectoration of blood-tinged froth, occurs venesection should be immediately performed. Other valuable therapeutic measures in case of acute pulmonary edema are the inhalation of oxygen and the trapping of blood in the four extremities by bandages. The latter procedure should be employed when morphine and venesection fail to terminate the seizure. Thorough digitalization alone often suffices to prevent the attacks.

5. *The stage of right ventricular failure.* This phase of the illness is characterized by venous distention, engorgement of the liver, edema, and accumulation of fluid in the serous cavities. Rest in bed is necessary.

Fluids should be restricted to one quart, or at most three pints daily. From time to time the Karrel diet, which consists of a glass of milk four times daily without other food or fluid, may be used for one or two days. Potassium chloride should be substituted for common salt in the patient's salt shaker. The diet should consist of five small dry meals of easily digestible food. Digitalis should be given in full dosage and diuretics are indicated. The most effective diuretics are salyrgan, which should be administered intravenously in doses of one to two cubic centimeters, not oftener than every four or five days, and theocin, which may be given in two-day courses of five grains, three to six times daily. Salyrgan may produce nephritis and is contraindicated in patients with gross blood in the urine. Theocin does not ordinarily produce dangerous results but frequently it causes distressing nausea and vomiting. Other diuretics of the xanthine group, such as diuretin and theocalcin, are less nauseating but less effective than theocin. By proper use of these drugs dropsy can be overcome in all except the most obstinate cases. Following the disappearance of obvious edema, the patient should weigh daily and diuretics should again be used whenever the scales show a tendency toward a rapid gain in weight. By this means massive accumulation of edema can be prevented in most patients. For the cachectic state, which often supervenes in patients who have had edema for a long time, abundance of food, iron salts and potassium phosphate are indicated.

In all stages of cardiac disease the psychological management is of great importance. To many persons the term "heart trouble" is synonymous with inevitable sudden death in the near future. Actually, if cases of angina pectoris are excepted, the majority of patients with diseases of the heart die in their beds and live for many years after the disease process has become manifest. Tactful relief of all unnecessary fears is an important therapeutic procedure. Only necessary restrictions should be imposed and the reasons for such restrictions should always be explained. The patient's happiness as well as his health is a consideration of prime importance.

RECENT ADVANCES IN THE TREATMENT OF CHRONIC BRONCHITIS*

By
JAMES F. ALISON, M. D.
And
JESSE P. CHAPMAN, M. D.
Selma, Alabama

During the past century there has been little, if any, advance in the treatment of chronic bronchitis. Neil and Smith in their "Compendium of the Various Branches of Medical Science", published in 1852, outlined the treatment as follows: "Counter irritation over the chest . . . Inhalations

acute respiratory infections by inhalation of chlorine gas, which enjoyed a brief flurry of popularity in recent years, was known to our great-grandfathers.

ETIOLOGY, PATHOLOGY AND SYMPTOMATOLOGY

Chronic bronchitis is almost invariably secondary to upper respiratory infections. Repeated attacks of acute bronchitis and infection of the paranasal sinuses, tonsils and teeth are the foremost causes. The offending micro-organisms are those usually found in the respiratory tract.

The pathology is that of chronic inflammatory changes. There is round cell infil-

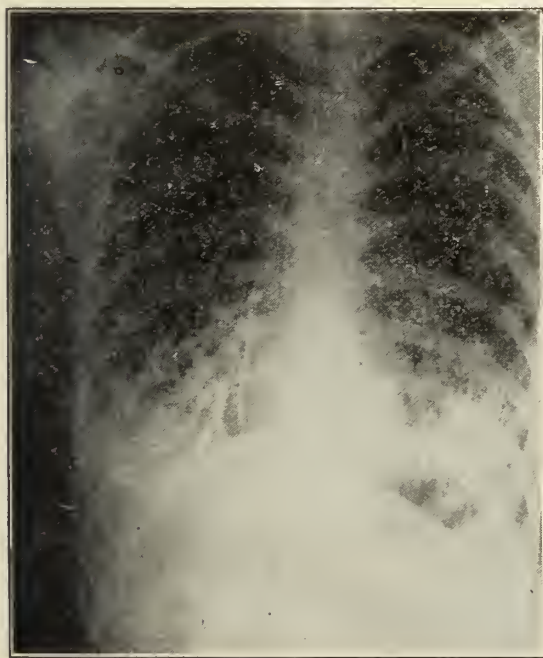


Fig. 1. Bronchiectasis. Unilateral cylindrical dilatation of lower bronchial tree. Atrial shadows appear normal on left side.

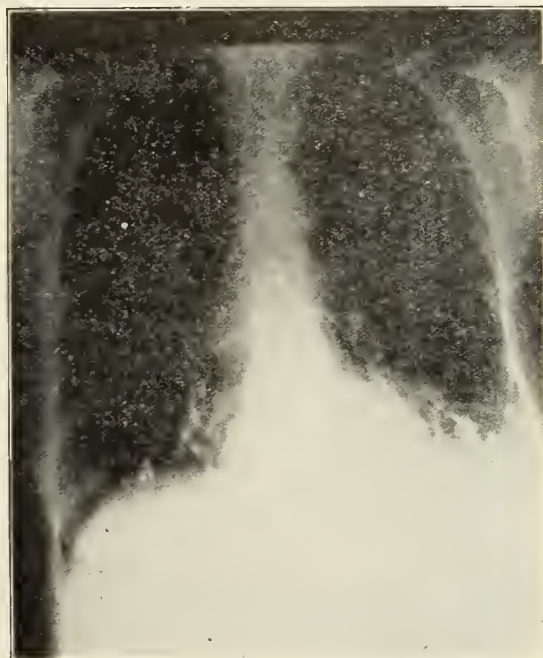


Fig. 2. Clubbing or atrial expansion of terminal bronchioles. Moderate cylindrical dilatation of both sides.

of the vapor of tar, chlorine and iodine are often of benefit . . . Tonics are required in the debilitated cases together with a nutritious diet, warm clothing, outdoor exercise and, in some cases, cod liver oil, iodine and change of air." Miller, writing in a recent volume on Internal Medicine published in 1932, says of the modern treatment of this condition: ". . . warm, mild climate in winter . . . potassium iodide is frequently helpful, . . . to a lesser extent than in acute bronchitis, medicated inhalations are of value." It seems that the treatment of

tration into the bronchial walls and a gradual loss of elastic tissue with replacement by fibrous tissue. Exudation is increased, sometimes greatly. The exudate may become frankly purulent. As the infection progresses the bronchi become dilated and sacculated. The condition may progress to bronchiectasis with the formation of cavities.

These patients come to the physician for relief of cough. The cough is productive and extremely annoying. There may be other symptoms, slight fever, rheumatic pain, etc., but usually the cough is predomi-

*From The Marcus Skinner Clinic.

nant and the history will show that it has been present from months to years.

INTERPRETATION OF BRONCHIOGRAMS

No portion of the lung radiogram is more difficult of interpretation than the hilar zones. The bronchioles with their concomitant vascular and lymphatic structures, as well as the embedding connective tissue, project normally variable shadows. The bronchiolar branches should be traced to their atrial expansions and careful attention must be given any abnormal dilations or sacculations. The use of iodized oils instilled into the bronchi facilitates this study.

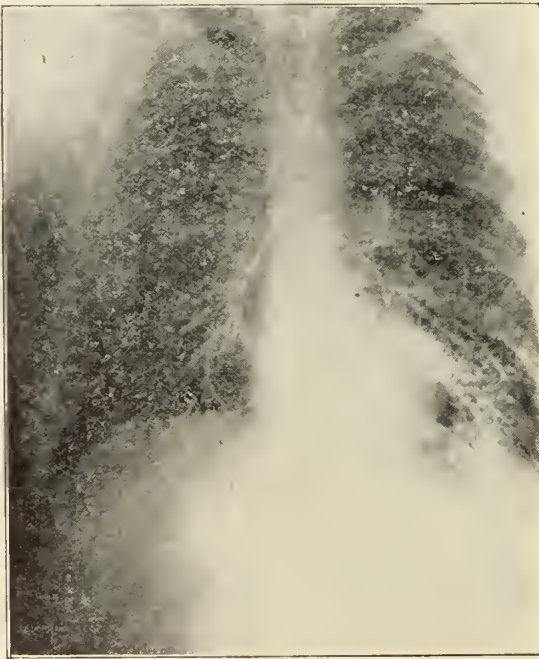


Fig. 3. Areas of the lower bronchial tree show slight cylindrical dilations, with peribronchial thickening. More often seen in chronic bronchitis.

The gradation from chronic bronchitis into well defined bronchiectasis may be difficult to recognize on account of the appearance of peribronchial thickening. In bronchiectasis there may be cylindrical dilatation of the bronchioles, or sacculation from dilated atria, or areas of definite cavitation confined to the bronchial tree. Central zone changes must be distinguished from the parenchymatous findings of tuberculosis.

The bronchiograms must be taken with longer exposure than for lung tissue. An

oblique position of the patient often brings into view localized areas otherwise obscured in the usual film. The diagnostic value of the film often depends upon the carefulness of the filling. It is claimed that a normal lung will get rid of the iodized oil in from 24 to 36 hrs., as a rule, but the bronchiectatic lung will retain the opaque substance for a much longer period. The lower branches of the bronchial tree are usually the best visualized after iodized oil instillation. Being the most dependent part of the tree, with poor drainage, these areas are most frequently associated with bronchitis and bronchiectasis.

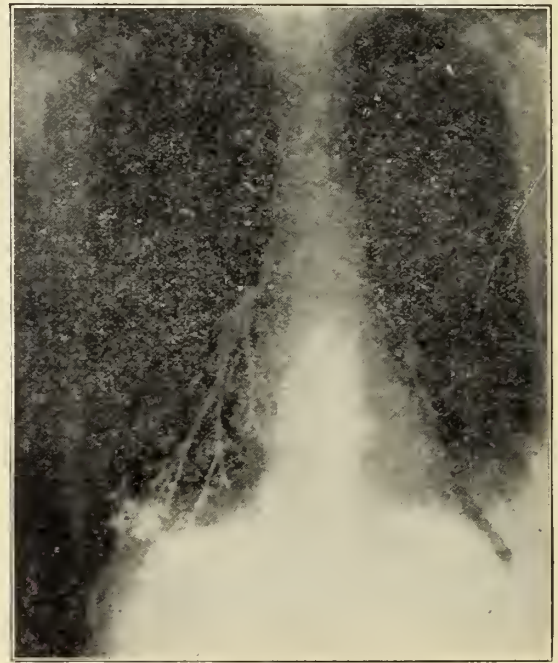


Fig. 4. Well outlined bronchial tree on both sides. Dilatation of larger branches, with puddling of oil in the atrial expansions. Chronic bronchitis, with bronchiectasis.

TREATMENT

The first step in treatment should be a thorough physical and roentgenologic examination and elimination of foci of infection. The necessary dietary and hygienic instructions should be given the patient. The main object in treatment is to curb or eliminate the cough and expectoration.

Oeschner in 1926 first called attention to the fact that after the instillation of iodized oil in the bronchial tree for bronchography there was an amelioration of the symptoms,

e. g., cough and expectoration, for a variable length of time. One of us, in a recent publication, described the beneficial effects of repeated instillations of iodized oil in asthmatic bronchitis. Noting the improvement manifested in this class of patients, we began using iodized oil instillations therapeutically for chronic bronchitis.

We found that practically without exception these patients who suffer with a chronic cough or repeated attacks of bronchitis show some abnormality of the lower bronchial tree. Following the instillation of the iodized oil for diagnosis there was a slight increase in the cough and expectoration for about 24 hours but after that the cough was much less and the amount of sputum greatly reduced. This improvement lasted from 1 to 3 weeks and in some patients as long as three months. The instillations were repeated as necessary, the intervals being lengthened. We found that it is possible to keep patients in comparative comfort with infrequent instillations.

515 Mabry Street.

CANCER OF THE UTERUS

By

NORBORNE R. CLARKE, JR., A. B., M. D.
Mobile, Ala.

My selection of this subject for presentation has been motivated chiefly by two reasons. One is the fact that carcinoma of the uterus plays a most important part in a specialty in which I have long felt keen interest. The other is because it is my belief, based on personal observation and experience, that the average physician or surgeon has an inadequate conception of this problem.

A tremendous amount of work and thought has been expended upon this subject by men primarily interested in the treatment of and attack on uterine carcinoma. Much has been accomplished towards the attainment of a true scientific understanding of this difficult problem. Many valuable facts have been established and have become accepted as truisms. Treatment of this disease is now becoming systematized and fairly effective, and results, at the present time, are relatively gratifying and encouraging in a field of medical

endeavor long held to be most dismal from the therapeutic standpoint.

Cancer of the uterus should be a matter of real interest to the medical profession in general, if for no other reason than the great importance of the subject. The womb is the most common site of malignant disease of epithelial origin in the human body. S. H. Welch has shown that carcinoma of the uterus constitutes about one-third of cancer in general, the womb surpassing the stomach and breast in frequency of primary involvement. On the basis of the latest and most comprehensive vital statistics, it has been shown that one woman out of every eight, who live to be forty years of age and upward, develops cancer. In over one-third of these unfortunate individuals, the cancer originates in the uterus. The concerted vigilance and interest of the general practitioner, the diagnostician, pathologist, surgeon, and radiologist are necessary in the treatment of this disease. It is only by early, accurate diagnosis followed promptly by the institution of proper and effectual treatment, that this disease can be successfully combated.

In any consideration of uterine cancer, we must studiously differentiate cancer arising in the cervix from that originating in the fundus uteri. The predisposing causes, pathology, symptoms, physical signs, diagnostic features, clinical course, treatment, and prognosis are so markedly different in the two varieties of uterine cancer, that for all practical purposes it is best to consider the cervix and fundus uteri as separate and distinct organs, independent of one another as far as their relation to cancerous involvement is concerned. This is probably the most important basic consideration in the whole problem of uterine cancer, and the failure to fully appreciate the truth of this fact is responsible for much of the difficulty and disappointment in the treatment of this disease.

The cervix extends from the external os uteri which opens into the vagina to the internal os which marks the beginning of the uterine cavity. The vaginal portion of the cervix ordinarily constitutes a little more than a third of its entire length. This part of the cervix, known as the pars or portio vaginalis, has its surface covered by a mod-

ified epidermis, consisting of layers of squamous epithelial cells like those of the skin, but without hair follicles, sweat or sebaceous glands. Normally, the squamous epithelial cells covering the portio vaginalis merge into true mucous cells just above the external os. The endocervix, extending from this point to the internal os, is lined on its surface by high cylindrical mucous cells which also extend downward into the muscular substance of the cervix as the lining of the arborescent mucous glands with which the endocervix is abundantly supplied. Cancer of the cervix originates most commonly in the squamous epithelium of the portio vaginalis as a typical squamous-cell cancer or epithelioma. It may, however, at times arise from the cylindrical cell of the endocervix in which case it resembles the adenocarcinomatous type of growth. It thus falls into two groups, on the basis of cell type, the squamous and the cylindric. On the basis of cell differentiation, cervical cancer can be further classified into three classes: the spinal cell type which is organized and mature; the spindle cell type which is unripe and undifferentiated; and the transitional type which presents intermediate characteristics. Cancer of the fundus arises in the surface epithelium lining the uterine cavity or in the epithelial lining of the tubular endometrial glands. It is almost always adenocarcinomatous in type, in contrast to cervical malignancy which, as has been already pointed out, is usually of the squamous cell variety.

Cancer of the cervix is by far the most frequent form of uterine cancer, this part of the uterus being involved primarily in approximately ninety per cent of all cases. It is a disease of middle life rather than of old age, the greatest incidence being between the years of thirty-five and forty-five. At times, it is encountered in younger patients and occasionally is seen beginning after the fifth decade of life. Carcinoma of the fundus, on the other hand, most commonly and typically arises in the postmenopausal period. Cancer of the cervix rarely occurs in women who have never borne children. Although the actual cause of cancer of the cervix is unknown, as in the case of cancer in general, trauma incident to child birth and infection of the cer-

vix, resulting from parturition or from gonorrhea, play an important predisposing part in the development of cervical malignancy. Howard Kelly states his firm personal conviction that the neglected trauma of child birth, followed by cervical infection, with thickened everted lips, chronic endocervicitis and prolonged leucorrhea, account for the great majority of cancers arising later in the cervix. The chronic irritation theory which seems to fit the case of cancer of cervix so well, does not, however, apply to carcinoma originating in the fundus. Here, previous pregnancy plays a much less important role, as from 30 to 50 per cent of cases of cancer of the fundus originate in nulliparous women or in those who have long been sterile. Obstetrical injury and infections rarely involve the fundus of the uterus as compared with the cervix. Predisposing causes are not so well defined, therefore, in cancer of the fundus. Its rather frequent association with fibroid tumors is regarded by the majority of authorities more in the light of coincidence than as an actual predisposing cause. W. P. Graves maintains that impaired drainage of the uterine cavity, due to such factors as cervical stenosis, retrodisplacement of the uterus, etc., is an important causal factor in the development of fundus carcinoma. This opinion, while coming from a highly respected source which carries with it the weight of authority, is not generally regarded at present as being more than an unproven theory.

The progress of cancer, unaffected by treatment, is not confined to the progressive infiltration of contiguous tissues by direct extension of growth alone. It also spreads through the lymphatics, and, much more rarely, by way of the blood vessels, to structures more or less remote from that in which it originates, there taking the form of metastases or secondary cancerous masses of a similar character. In cancer of the cervix, the disease makes rapid progress tending to an early extension from the site of origin. Two chief types are recognized clinically: the everting or proliferating type which originates in the squamous epithelium of the portio vaginalis and tends to develop the cauliflower mass so typical of cancer of the cervix; and the inverting or

ulcerating type which begins as a rule within the cervical canal and which tends to ulcerate and erode the cervix while at the same time extending rapidly to surrounding tissues. Fortunately, the former is the more common variety. The appearance of the cervix may be most misleading in cancer. Often when a large external cancerous mass occupies the entire cervix, filling the upper vagina, there may be but little circumferential extension, whereas a far less exuberant cervical growth may be associated with extensive cancerous processes radiating far out into the surrounding tissues.

The most common early extension of cancer beyond the cervix proper is into the loose parametrial tissues which extend laterally in the bases of the broad ligaments. From this site, further extension usually takes place by way of the lymphatics—the parametrial, iliac, sacral, lumbar, superficial and deep inguinal—the coeliac glands being subject to involvement. The adjacent connective tissue planes, such as the vesico-vaginal and recto-vaginal septa, are particularly prone to involvement at a later date, by means of direct extension of the growth with eventual involvement of the bladder or rectum. The level of the internal os usually marks the upper limit of extension of cancer of the cervix, the uterine body becoming involved only late in the disease. Even in the terminal stages of cancer of the cervix, its manifestations are in general localized to the region of the pelvis. Metastasis to distant organs and structures, such as the liver, lungs, brain and skeleton, occur much less frequently than in the case of cancer originating in other parts of the body such as the breast or stomach.

Cancer originating in the fundus of the uterus tends to spread much less rapidly than that arising in the cervix. One reason for this is that fundal carcinoma occurs chiefly in older women with the general atrophic changes and the diminished vascular and lymphatic functional activity incident to this later period of life. Cancer of the fundus grows locally, proliferating within and filling the uterine cavity, and gives rise early to warning symptoms in the form of abnormal bleeding and discharge.

Eventually, if neglected, the neoplasm pushes its way through the uterine wall invading the pelvis and usually extending in particular to the ovaries. It may push its way laterally between the layers of the broad ligaments and extend downward, invading the cervix and appearing in the vagina. Metastasis takes place, however, far less frequently, and at a much later stage of the disease, in fundal than in cervical cancer.

Cancer of the cervix is treacherous in the insidious nature of its onset. Symptoms in the beginning of this disease are often so slight as not to attract the immediate attention of a patient ordinarily attentive to disturbances in her health. It is said that the average patient with cancer of the cervix has had symptoms suggestive of the disease for six months or more before she seeks medical aid. The two principal symptoms of this disease are bleeding and leucorrhea. The bleeding of cervical cancer is of no characteristic type, but commonly is noted as a more or less constant spotting of blood which tends to become more marked as time goes on. Intermenstrual spotting is highly suggestive of cancer. The menstrual bleeding is apt to become more and more profuse and prolonged until finally the patient seems to bleed more or less constantly. Bleeding tends to follow coitus, douching, and any form of local manipulation. In the early stages of the disease, the leucorrheal discharge is thin and watery and resembles beef juice in appearance. It frequently escapes notice, however, until it becomes profuse, blood-tinged, irritating and offensive.

The cervix is a peculiarly insensitive organ as witnessed by the manner in which it can be grasped by a tenaculum or even cauterized without an anesthetic. Pain, therefore, is unfortunately a late symptom in this disease, developing only after extension has taken place beyond the cervix and the pelvic nerve trunks have become involved. Loss of weight and strength, and the development of the anemic state so typical of terminal cancerous cachexia, also occur late in the course of this disease as a rule. It is remarkable how well preserved and healthy in appearance many patients afflicted with cancer of the cervix appear in

its early stages. This is due in part to the fact that organs of digestion are not involved early and to the fact that the disease takes place at a time in life when women tend to put on weight as a general rule. In contrast to cervical cancer, carcinoma of the fundus exhibits at an early stage symptoms which should as a rule give rise to alarm and investigation before the disease has progressed to any serious extent. Here, again, bleeding and discharge are the cardinal symptoms of the disease.

Bleeding occurring in a woman definitely past the menopause is most commonly due to cancer of the fundus, and should be regarded always as such until definitely proven to be due to some other cause. Bleeding occurring during or at the menopausal irregularities may be more confusing. However, it is well to remember that abnormal bleeding at the menopause is never due to physiologic cause. There is always some abnormal basis present, be it cancer, fibroids, polyps, or endocrine imbalance, and such disturbance is always worthy of thorough investigation. Many women die a wretched and perhaps needless death because of failure on the part of their physician to investigate abnormal bleeding at the time of the climacterium. All too often such a patient is dismissed with perfunctory advice and unwarranted encouragement and is told to wait and see if the condition does not clear up of itself, without the slightest effort being made to make an examination. Leucorrhea is also an early symptom of fundus carcinoma. In the early stages, it is watery in character, later becoming profuse, purulent, malodorous and excoriating. Symptoms other than bleeding and discharge are of little value in this condition, as they do not manifest themselves until the disease is far advanced.

Early diagnosis is by far the most important step in the successful treatment of cancer of the uterus, and by early diagnosis is meant diagnosis before the nature of the disease becomes obvious clinically. The conception of cancer of the cervix as an ulcerating or fungating growth with cauliflower excrescences is as disastrous as a delay in the diagnosis of appendicitis.

The first step in the diagnosis of uterine

cancer, after the history has been obtained, is the careful performance of a pelvic examination. This should include a bimanual vaginal examination of the uterus, supplemented by a digital rectal examination, and followed by inspection of the cervix by means of an appropriate vaginal speculum. Particular attention should be paid to the consistency and mobility of the cervix and fundus as elicited on palpation. Rectal examination gives a better conception of lateral and posterior extensions of the disease, which often can not be appreciated by vaginal examination alone. In cancer of the cervix, the vaginal portion usually exhibits evidence of long standing laceration and infection. In early cases, a small, hard, granular area, which bleeds easily, may be seen on inspection. Later on, such an area may exhibit fine sprout-like excrescences. Another case may show a shallow ulcer with elevated indurated edges. Still a third may present only an indurated nodule in the cervical lip. Later on, as the disease progresses, characteristic cauliflower masses develop in the everted type, while in the inverting form the cervix may be converted into an ulcerating cavity.

The most difficult early cases of cervical cancer to diagnose are those which originate within the cervical canal. These will generally exhibit some abnormal appearance, however. If the condition is at all suspicious, the tip of a uterine sound should be introduced into the cervical canal and its surface gently traumatized. If free bleeding follows such a simple maneuver, a diagnostic curettage of the cervical canal should be performed and specimens of tissue obtained for microscopic examination. Biopsy should be done routinely on all cases, both early and late, whenever there is the slightest suspicion of cancer. This is accomplished by excising a suitable piece of the tissue under suspicion and immediately sealing the wound with the cautery. The biopsy specimen is preserved in 4% formalin and should be submitted to a competent pathologist for examination.

Bloodgood correctly states that the clinical and gross pathology in uterine cancer is becoming less and less essential and that emphasis is now quite properly placed upon the early microscopic picture. Micro-

scopic diagnosis in late cases is, of course, only confirmatory, but in early cases it is all important, for differentiation from simple benign lesions is often impossible in the early stage. A heavy responsibility thus rests upon the pathologist, but the findings in the hands of a well trained man should be uniformly reliable. In cancer of the uterine fundus, curettage, with microscopic examination of the scrapings, is the only safe and reliable method of diagnosis. At times, on bimanual examination, the fundus may be found to be enlarged and characteristically boggy on palpation, but this is not to be relied upon as important diagnostically.

In the consideration of treatment of cancer of the cervix, the first thought should be that of prevention. The precancerous conditions of the cervix should be corrected at an early date by proper treatment. The old medical teaching that obstetric injuries should be left alone until the end of the childbearing period is now regarded as obsolete by the great majority of obstetricians and gynecologists. Modern methods of repair and treatment are most satisfactory and should not prejudice or complicate subsequent pregnancy.

The most important point which I wish to develop in this paper is that the treatment of cancer of the cervix should be by radium, whereas the treatment of cancer of the fundus is surgical. Surgery is now considered by the great majority of gynecologic surgeons to be feasible only for the very early case of cervical malignancy, if it is to be employed at all. This is due to the high primary mortality of surgery, even in the most capable hands, and because of the good results of radium, which equal and even surpass those of surgery, while carrying no primary mortality at all when properly employed. If surgery is to be done for cancer of the cervix, only the radical Wertheim technique can be considered as applicable.

This amounts to a removal of practically everything in the pelvis compatible with life. The entire uterus must be excised, together with its adnexa and the upper vagina, and a wide excision of the parametrial tissues at the bases of the broad ligaments performed, leaving nothing in the pelvis at the completion of the dissection but the

bladder, ureters, rectum and larger blood vessels. This is carried out through an abdominal incision, the vaginal attack on cancer of the cervix having been largely discarded by American gynecologists, although it may be held to be applicable in a very occasional case of an obese patient with prolapse and associated with cervical cancer.

The Wertheim technique is widely different from complete hysterectomy for other conditions than cancer of the cervix. Unfortunately, the average surgeon seldom seems to appreciate this fact and usually performs the incomplete operation in the name of the complete. Such an error is comparable to a simple amputation of a cancerous breast without excision of the pectoral muscles and dissection of the axilla. In early cases of cervical malignancy, in which the parametrial regions are free of cancerous extension and there is absence of the slightest evidence of extension of the disease beyond the cervix, a few, very few indeed, gynecologists in this country still believe that surgery has a place. Such cases are rarely seen, however, and, even in the most expert hands, the primary operative mortality for the radical Wertheim operation in these early, favorable cases is about 12%, with a five-year curability of only 20%. Without considering any other point, surgery would seem to lose its case, for radium, taking cervical cancer patients as they come, good, bad and indifferent, has a five-year curability of 25%, and no operative mortality at all when employed by one expert in its use.

In the operable and early borderline cases, the five-year curability of radium rises to approximately 60%, which is an exceedingly creditable figure. I believe that if these facts were generally known and appreciated, there would be very little if any surgery attempted for cancer of the cervix. All too often, a surgeon assuages his professional conscience with the thought that radium is not easily obtainable for his patient whereas surgery of a sort is. I have frequently heard surgeons state that they were operating on a cancer of the cervix to give the patient a "chance" of cure, and, that if she died or if recurrence took place, it would be because she had a hope-

less cancer and there would be the consolation of knowing that everything possible had been done to save her life.

Such reasoning is erroneous in the light of present knowledge and if there be any excuse for it it is only that of ignorance. Radium can be obtained for the deserving indigent patient as well as for the private pay case in almost any community of any size in this country, and where it is lacking, if the proper demand is made for it, a supply will be created.

Many surgeons do not realize the narrow field of applicability of surgery to cancer of the cervix, and, if they did, would not ordinarily have an adequate idea of how to perform the necessary radical operation. This is a strong indictment of American surgery for this condition, but I fear it is all too true. A simple though convincing proof that surgery is often inadvisably attempted and inadequately performed for cancer of the cervix is seen in the nature of the recurrence which typically follows operation for this condition. Recurrence in such cases nearly invariably occurs in the scar of the vaginal vault, or in the immediately adjacent tissues, thus demonstrating an incomplete removal of the primary cancerous mass.

It is now generally accepted amongst gynecologists of this country that radium should be the almost universal treatment of cancer of the cervix. Its promiscuous use, however, is to be avoided, as it is a powerful potential agent for evil as well as for good. Only an individual skilled and experienced in its use should attempt to employ it. Considerable controversy has arisen of late in some ultra-refined circles as to whether the gynecologic surgeon should treat his own cases with radium or refer them to a radiologist. There is no question that many gynecologists have been the pioneers in this work and have blazed the way which radiologists have followed in later years. Men in fortunate clinical position usually have acquired their own supply of radium and have become experienced and competent in its use. I see no reason why, however, under less advantageous circumstances, the surgeon and the radiologist can not cooperate and work together harmoniously for the best interest of the patient.

I shall not attempt to go into the minute details of the technique of radium therapy in cancer of the cervix. It is sufficient here to endeavor to point out a few of the important general principles which underlie its proper use. Contraindications to radium therapy in cervical cancer are few: First, it is not to be used unless it has been established by microscopical diagnosis that the lesion under consideration is cancerous. Second, pelvic inflammatory disease of an acute or subacute nature, coexisting with cancer of the cervix, has been eradicated by other measures. Finally, a note of warning should be struck regarding hopelessly advanced cases. In such cases radium, unless most cautiously and skillfully employed, will only make matters worse through the almost inevitable formation of vesical or rectal fistulae.

The local and anatomic conditions are favorable in the pelvis for the use of radium and the supplementary employment of deep x-ray therapy if the latter be deemed an advisable adjuvant in treatment. The cervix can be easily reached through the vagina for direct local application and the central location of the uterus permits intensive radiation through a number of different skin portals. The exact method of application of radium to the cancerous cervix differs in individual cases. As a rule, 50 mgms. of radium, properly screened, is inserted in the uterine cavity, the applicator extending from the fundus to the external os. In addition, the vaginal portion of the cervix is treated by the insertion of radium needles, containing as a rule $12\frac{1}{2}$ mgms. each. These are placed circumferentially, their points directed slightly towards the internal os, four or more needles being ordinarily employed. Dosage is expressed in terms of milligram-hours, a milligram-hour being the application of one milligram of radium for one hour. The total dosage of radium for cervical cancer varies from 3,000 to 4,000 mgm.-hrs., and the plan of treatment as to the number and length of individual treatments varies with conditions and with the individual radiologist. It must be remembered that the therapeutic use of radium is still in its infancy and that radiology is in its developmental stage. Technique and method are not yet standardized to the

extent that surgery has attained and at present various techniques, differing in minor points, seem to be producing good results in the hands of different individuals.

The action of radium on cancer of the cervix has been brilliantly studied by L. K. P. Farrar. Radium acts directly and destructively on tissue locally within a certain distance. The extent of this destructive action varies with the dosage and screening of the radium. Beyond the area of complete cellular destruction is a zone of differential destruction in which cancer cells are killed but normal cells are not. It is in this action that radium seems to have an insurmountable advantage over surgery. Radium also stimulates the marked proliferation of cellular connective tissue which in time becomes organized as dense scar tissue. This action, together with the production of a thrombotic endarteritis in the smaller blood vessels of the part, tends to encapsulate and starve to death such cancer cells that may escape the direct lethal effect of radiation. The full effect of radiation is not completed for about six months after treatment. Complete healing usually occurs, with general contraction and induration of the tissues due to the development of scar tissue. Deforming contractures, intractable ulcers due to burns, fistulas, etc., are to be avoided by strict adherence to a careful and conservative technique.

In contrast to cancer of the cervix, carcinoma of the fundus lends itself very satisfactorily to surgery. Although much less common than cervical cancer, the curability of cancer of the uterine fundus is much greater. Complete hysterectomy with removal of the adnexa is all that is necessary as a rule. Extension of the disease occurs late so that surgical removal of the primary growth usually results in its complete extirpation. The adnexa should always be removed together with the entire uterus, however, as the ovaries are the most common site of metastasis in this form of uterine cancer. Sampson believes that they become involved due to direct implantation with cancerous cells which have migrated from the uterine cavity by way of the fallopian tubes.

A word of caution is not amiss here in speaking of total hysterectomy for fundus

cancer. Although the wide and difficult dissection and excision of the Wertheim technique are not necessary in this condition every effort should be made to avoid contaminating the operative field with cancerous tissue. It is well to close the external os by suture at the time of the preliminary vaginal preparation for the operation. The fimbriated ends of the fallopian tubes should be ligated at the onset of the abdominal operation. Great care should be taken not to squeeze or perforate the uterus by any grasping instrument. Satisfactory traction can be easily obtained by clamps placed alongside the uterus on the broad ligaments. Many men now elect to follow operation with a course of deep x-ray therapy and this would seem to be a wise precaution in most cases. The operative mortality for fundus cancer is about 2% in the hands of capable surgeons, whereas the five year curability of the disease from surgery alone averages between 70 to 80%.

In conclusion, I wish to summarize and again lay emphasis on certain considerations of the problem of uterine cancer which seem of importance to me.

1. Cancer of the uterus is a common and serious malady deserving of more study and understanding on the part of the medical profession in general.
2. Cancer of the cervix differs widely from cancer of the uterine fundus in almost every particular.
3. Early diagnosis, based on the microscopic picture, is essential to success.
4. The treatment for cancer of the cervix should be almost universally by radium while that of fundus cancer is surgical.

Acute Coronary Occlusion—The evidence gained from a study of wounds of the heart with injury to important branches of the coronary arteries indicates that complete healing of the induced infarct requires at least ten weeks. It is reasonable to conclude that infarcts following spontaneous occlusion of diseased vessels require even a more prolonged period.

It is doubtful whether "stimulants" of the type represented by digitalis should ever be used in acute coronary occlusion. The reasons for this conclusion have been presented in detail and there is strong evidence suggesting that illogical therapy may augment the liability of the primary mechanism of death, namely, ventricular fibrillation.—*Porter, Virginia M. Monthly, July 1934.*

PREPSYCHOTIC TRENDS IN THE SCHOOL AGE*

By
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From ten to twenty-one cents of every dollar collected by each state for taxation goes to the maintenance of public institutions for the mentally ill. Statisticians estimate that four per cent of all children in school attendance will become patients in mental hospitals sooner or later unless mental hygiene precautions are taken. How many countless more will become social misfits, unhappy neurotics, impractical cranks, and inefficient dreamers we cannot say or estimate with any degree of accuracy.

We cannot in a few words explain or even enumerate the causes of mental disease, yet no one will deny the part that the personality plays in fashioning the abnormal mental pattern when the causative factors begin to make their imprint upon the life and reactions of an individual.

It is generally conceded that three complex processes form the basis of the child's personality: biologic heredity, psychophysical development, and the social environment. Over the first of these the educator has no influence whatsoever in so far as it pertains to the pupil before him. The laws of psychophysical development have become so very complicated with our increasing knowledge, particularly of the hormones—those dynamic elements derived from the glands of internal secretion, about which so much has been observed and written and yet which are so elusive of control—, that we again abandon our hopes of having any effective influence here. It is in social environment then that we may expect to do our greatest work.

When the child reaches us in even the primary grades his basic personality traits are well ingrained. Professor G. C. Ferrari took daily notes on the psychologic development of two of his children from birth until they were ten years old, notes which were read and studied by him only after the

youngest had reached the age of twenty. He was able to demonstrate that from the second to the third year all of the qualities of their intelligence and their character, which became their characteristics in adolescence and adulthood, were even then very well defined.

But the child does not grow up isolated; his life, his mental and physical activities are developed in a social environment of adults, in a world of persons whose specific interests are different from his own. The individuality of the child, which was so manifest in his first few years, seems to disappear, absorbed by this preponderance in number and in mass. By this sole fact of living in company with other people, the youth, of necessity, becomes more and more a social unit, aided in this by imitation and play which are very active within him. But, while the intelligent child thus develops, he loses little of those peculiarities of his moral character which were manifest at the time that he was the egocentric little creature of two or three.

We begin then with some very great handicaps, not to repeat those just mentioned but to add those due to our frequent lack of understanding of the child as a pupil and as an individual. I think some of us forget that intelligence is one part, not the whole of mental life. Mental life has its true motivations in the emotions; in what William James called "that which gives a meaning to life". Unless we can remember that the whole child goes to school, not just his intellect, we shall be handicapped in our efforts and unaware of our responsibilities.

You are already well acquainted with the basic principles of the psychology of the normal person. I shall try to present some phases of abnormal psychology gleaned through observation and experience in dealing with those who have already failed to adjust themselves socially and who have now become institutional problems.

CASE 1. V. M. White, female, age 20. Admitted to Bryce Hospital July 5, 1933, furloughed improved, August 30, 1933. Without relating the complete history we find that schooling began at six and the patient was considered a good student. As she grew older she was constantly faced with a turbulent household, her mother, a neurotic, being a regular complainer of indigestion and fatigue; and her father, all absorbed in business and the eternal pursuit of the dollar, came home apparent-

*Read before the Alabama Mental Hygiene Society at its annual meeting, Birmingham, March 23, 1934.

ly only to quarrel and censure the wife for her "nerves".

When the patient was ready to enter high school the family moved to another town. She made few new friends and at the age of fourteen began to prefer being alone and to "hate the town". However, she made excellent grades for two years. She spent most of her time at home where the household continued to be disharmonious. The patient was described as being an impractical person who grasped things quickly, dealing in generalities, a poor mixer, easily hurt, unsympathetic, pessimistic, moody, envious of others and of poorly systematized habits.

The present illness began during the summer preceding her sophomore year at college (age 19). She made good grades in her freshman year but plunged into summer school without any vacation. There appeared no well formulated plan or purpose to all this work except to complete her college course in three years, though there was no real financial stress. She made fair grades but was disappointed in them, repeatedly stated that her instructors did not understand her and felt that she did not receive justice at their hands. Within a few months she had given up every pretense of routine and quit school.

When admitted to Bryce Hospital she had developed systematized delusions of persecution, had become somewhat careless of her appearance, and was quite irritable and inadjustable. A Staff diagnosis of *dementia precox—paranoid type*, was made.

CASE 2. A. F. White, female, age 16. Admitted to Bryce Hospital July 12, 1930, furloughed improved, September 2, 1930. This patient lost both her mother and father within a short time of each other when she was eight years old, her mother dying in a state hospital for the insane. Before that there had been considerable disharmony in the home. The history of her very early childhood is meagre except that we find that she was highly nervous and easily and frequently dissatisfied with the least thing that occurred to mar her pleasure.

She attended school from the ages of five to nine and made average grades. She was considered to be very sensitive, bashful and self-conscious. She had no ideal home at any time, living first with one relative then another, becoming dissatisfied at each place. At the age of fourteen she began to have what she described as being unconscious spells but which were in reality hysterical episodes. During these she would appear utterly oblivious to what was going on about her. Sometimes she would wander into the woods, at other times she would lie perfectly still as if in a trance. She states that during these attacks she saw visions of her father and mother. On one occasion, thinking her relatives cared nothing for her, she attempted suicide with a butcher knife. Detailed questioning revealed the fact that the whole episode occurred in close proximity to one of her sisters, who quickly and easily prevented her doing any real harm to herself.

After admission to Bryce Hospital a study of her personality traits and the description of these epi-

sodes led to a Staff diagnosis of *psychoneurosis—hysterical type*.

CASE 3. W. C. White, male, age 20. Admitted to Bryce Hospital January 31, 1932, furloughed recovered, May 23, 1932. A brief review of this case reveals a father without neuropathic taint but who gave a history of syphilis when a young man. The mother was unstable, nervous and frequently confined to bed with migraine headaches.

The patient was described as being of a highly nervous temperament since infancy. As a child he carried everything to extremes; he played too much, talked too much, ate too much and was constantly on the go. He would start some project, work furiously at it a short time, then suddenly drop all interest in it to take up something else.

As he grew older and entered school he carried these characteristics with him. He would recite well at times but his interest was too fleeting to permit him to make good grades. He later became moody and pessimistic, developed a fear of war, of accidents and of adversity without any noticeable provoking reasons. He quit school after failing to pass the fifth grade and became an auto mechanic's helper. While a worker he smoked cigarettes to excess and would take as many as seven aspirin tablets and a Coca Cola at one time. He was never satisfied with his work though he continued at it sporadically.

His psychosis is described as having begun rather suddenly with excitement and restlessness. It had existed fifteen days and was rapidly growing worse when he was admitted to Bryce Hospital. Here he was talkative, distractible, flighty, hyperactive, would not keep his clothing on, and was unable to cooperate because of his constant activity. A Staff diagnosis of *manic depressive psychosis—manic type*, was made.

Through all of these briefly related cases we find, not a precipitous onset in a previously stable individual but an unstable defective personality background to which were added environmental situations, faulty training, adverse circumstances and emotional stress. How effective early recognition and sane guidance would have been in averting these disasters I shall not attempt to say. I do believe though that you will all agree that, had this been your child, your brother or sister, you would have welcomed advice and treatment early. Unless we are familiar with personality defects and the broad principles of abnormal psychology, we will never be aware of our problems or helpful in their prevention.

Classification of mental disorders is of little value in itself and is in the field of the specialist. Names mean little unless they are understood. But classification does simplify and for this reason I shall mention

the characteristics of the more important types of mental disorders, the beginnings of which we would likely encounter in the school age.

Dementia Precox or Schizophrenia: Myer, in emphasizing the "shut-in" make-up of these cases, gave us the keynote of this type of mental disorder. Added to this we find a marked and early tendency to flee from reality and an increased interest in phantasy and day dreaming. Such individuals are inclined to be imaginative and impractical. Socially they are self-conscious, timid, sensitive and are apt to have few friends, and this latter because they are colorless and afford little social stimulus. They lack confidence, are seclusive and oftentimes stubborn. They are inclined to blame their failures upon circumstances and the lack of sympathy they think they receive from others. They are defensive but frequently ambitious. They often appear to be independent and self-confident but this is largely assumed. They have as a rule narrow interests and tend to avoid diversions in which there is group activity and competition.

Psychoneuroses: The temperamental tendency toward over-sensitiveness, toward markedly painful or markedly pleasant emotions and sensations is the most common and fundamental element in people who later become neurotic.

All of us are sensitive to our emotions to a greater or lesser extent but a number of children are over-sensitive, particularly to painful emotions. They over-react physically to correction, disapproval and punishment. They are not only over-prone to weep but to disturbances of digestion and circulation. They may lose their appetites, may vomit when distressing situations arise, or their bowels may become disturbed. They blush easily, they perspire too easily under excitement, and their over-active kidneys under the same circumstances may lead to one of the most embarrassing accidents of childhood. They show an abnormal dependence upon praise and approval and an exaggerated sensitiveness to disapproval. They avoid conflict with authority by exaggerated good behavior or by deception. They tend to develop fears and phobias easily; they suffer frequently of

headache and other symptoms for which no physical basis can be found and they seek refuge from correction in assumed complaints.

Manic Depressive Psychoses: While the onset of this type of mental trouble is usually sudden, perhaps half of these patients have inherited tendencies towards mood disorders. They are more frank and open than the two types just discussed, but they lack the emotional poise needed to meet the unusual occurrences of daily life. They are constantly seeking some means of escape from serious responsibilities and often feel inadequate in dealing with their problems. They are prone to hold themselves responsible for their failures, yet they are easily distracted by fleeting non-essential interests. They become downcast or elated on slight occasion. When they become definitely psychotic they are either greatly depressed, retarded and self-condemnatory (melancholia), or elated, euphoric and hyperactive (mania).

My statements up to this point may have created in you a feeling of morbid seriousness. That was not my original intention. I have merely tried, by relating a number of loosely connected facts, to promote in you an interest in personality development, abnormal psychology and mental hygiene. I have solved no problems, offered no cure-alls, but have merely pointed the way through the large open door of study. Every outburst of temper in a child need not cause great concern. Day dreaming is not to be considered the forerunner of dementia precox. Without these tendencies children would be colorless and without the means of building ideals. It is only when we take the whole picture, the whole personality, the exaggerated and prolonged tendencies that we should first suspect, then try to correct.

I never try to give psychiatric advice that I am not reminded of what Abraham Myerson had to say about his experiences in this direction. As a young man in psychiatry, married but without children, he used to give a lecture called "A Decalogue for Parents" with a positiveness that pleased both himself and his listeners. His first child came, then his second, and he changed the title of his talk to "Ten Hints to Parents" but gone was his authority. His

third child came and he stopped giving the lecture entirely.

So let us all be cautious. Let us not forget how much we do not know but rather let us recognize our problems and our difficulties and try to solve them by seeking knowledge from reliable sources, weighing our information carefully and keeping our feet on solid ground.

The world is made up of an almost unbelievable variety of personality types. It would indeed be a drab place if we were all standardized and stereotyped.

Lord Byron was often melancholy. Joan of Arc saw visions and was delusional. Elizabeth Browning was a neurotic invalid. Bunyan as a boy had no equal for lying and swearing. Schopenhauer felt that there was a demon within him and would not speak to anyone for weeks. Socrates, in his extreme asceticism, went barefoot even in winter, and yet the world was enriched by their deeds and the products of their minds.

GRANULOCYTOPENIA

By
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Recently leucocytopenia has been pushed to the fore by members of the profession because of certain etiologic findings in which the drug amidopyrine, in combination with barbiturates, is incriminated. The initial paper dealing with the subject was written by Madison and Squire, and entitled "Primary Granulocytopenia After the Administration of Benzene Chain Derivatives." These writers claim that such drugs as amidopyrine and other drugs of the benzene derivatives cause leucopenia. (Do they cause neutropenia?)

The term "benzene derivative" has but little meaning to many of us. When it is remembered, however, that some of our most commonly used drugs fall into this category, especially those in which the benzene nucleus occurs alone, or many times by linkage, we should familiarize ourselves with some of them, also some of the coal tar derivatives. Beckman gives a long list, but only a few shall be copied, such as acetanilid, arsphenamine, hexylresorcinol, mercurochrome, phenophthalein, salicylates, etc. He also makes the observation that allonal

and amytal are not included in the list, and observes that it is their saving feature.

Before the profession becomes too restricted in the employment of amidopyrine, either alone or in combination with the barbiturates, it must be convincingly proved that such drugs are beyond doubt tissue-selective and are productive of symptoms inimical to health. This has not been corroborated by animal experimentations. Some authorities claim that these drugs produce granulocytopenia by virtue of an idiosyncratic or allergic reaction. It is certain that by far too few cases of granulocytopenia have been under sufficiently close study and scientific investigation to exempt it from the mandatory *post hoc ergo propter hoc*. Allonal and amytal, as well as pyramidon, have been given in millions of doses without evidence of tissue-selective action or of giving rise to untoward symptoms. In view of the negligible number of cases of agranulocytosis claimed to have been caused by the administration of pyramidon and the pyrazolin derivatives, we must not permit ourselves to become too restrictive in the use of such drugs lest we deprive our patients of much comfort and a surcease from pain. These drugs, however, demand cautious and discriminate application—as do all potent drugs.

Several years ago pellagra was supposed to be caused by the use of corn and corn products, but after it was established that a paucity of prerequisites was responsible, corn was again crowned "Queen of the South" and has since occupied the throne with her consort cotton, "King of the South."

Narcotic Drug Addiction—The role which professional groups may play in the prevention of addiction is approached by an analysis of the present uses and abuses of dangerous habit-forming drugs, the cautions to be observed in their administration, the educational measures that seem desirable, and the scope of the problem confronting the professional classes licensed to deal in or handle such drugs.

The status of knowledge concerning the nature of drug addiction leaves much to be desired, and as a result there is no treatment for drug addiction from the standpoint of specific cure that will miraculously operate to rid drug addicts of their addiction. The satisfactory treatment is essentially institutional. . . .—Treadway, *Texas State J. Med.*, May 1934.

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RABIES TREATMENTS FOR INDIGENTS

By an act of the Legislature, November 3, 1921, provisions were made for the free treatment of indigent persons who had been bitten by mad dogs or other mad animals. It required that good and sufficient proof be furnished the Circuit Clerk that the patient was not financially able to pay the expense of the treatment. The original act implied that the rabies treatment would be given at the Laboratories of the State Board of Health and provided for transportation to Montgomery. However, in 1921, the shipment of rabies vaccine to the home of the patient began and the State fulfilled its obligation by furnishing the vaccine and by paying the attending physician \$10.00 for his services. Provisions were made to appropriate out of the State Treasury "a sufficient amount to pay these claims".

In January 1931, the State Laboratories began the manufacture of the rabies vaccine and since February 2nd, 1931 it has distributed this biological product free to all persons, indigent or otherwise. There seems to be a general misconception among the members of the medical profession concerning this feature of the Laboratory service. Under no circumstances is a charge made to citizens of the State of Alabama for the vaccine; it is free to everybody who

needs it. Wrapped around the box containing the vaccine is a questionnaire asking, among other things, the financial status of the patient. *This applies merely to the payment of the fee to the attending physician and not to the cost of the vaccine.*

On October 1, 1932, due to the reduced revenues of the State, the fee for administration was reduced from \$10.00 to \$7.00. A blanket appropriation of \$30,000.00 for every year was made by the Legislature on November 9th, 1932 for Pasteur treatment. Nevertheless, the provisions of the Fletcher Act were applicable to this appropriation, making it conditional on and proportionate to the State's income. Because of this, no monies were available for the payment of fees from March 15, 1933 to October 1, 1933.

With the beginning of the new fiscal year on October 1, 1933, the payment of the physicians' fee was resumed but in accordance with the retrenchment program it was further reduced from \$7.00 to \$5.00. This reduction was essential or sufficient money would not be available for the manufacture of the vaccine. Therefore, the present status of the Pasteur treatment is as follows:

1. The Bureau of Laboratories manufactures the rabies vaccine and distributes it free to all persons, indigent or otherwise.
2. A fee of \$5.00 is paid to the attending physician only in thoroughly authenticated cases of indigence.

It has been found necessary, in order to keep within the appropriation and to meet the requirements of the State Auditor, to promulgate strict rules for the determination of indigence. Around each package of treatments is a blank form which must be filled out *in toto* and returned to the Bureau of Laboratories. Among other questions is one concerning the financial status of the patient. If he is marked indigent, affidavits and vouchers for the attending physician, the Circuit Clerk and the patient himself to sign, are returned to the physician. It is absolutely essential that these affidavits and vouchers be completely executed, because the data thereon are used by the State Auditor for the judgment of each case. If all requirements are satisfied, a warrant for \$5.00 is mailed to the physician.

During the past five months there has been a marked increase in the incidence of rabies. Over 3,000 treatments have been distributed since January 1st and approximately 3,500 were dispensed for the whole year of 1933. The vast amount of office work entailed by this large number of cases, together with a reduced personnel, has made it impossible to mail out the affidavits and vouchers as quickly as before. However, every effort is being made to expedite this part of the Laboratory service.

J. G. McA.

EUGENICS AND HUMAN STERILISATION

The word eugenics is derived from the Greek *eugenes*—meaning wellborn—and was first used by the great English scientist, Francis Galton, in 1883. He defined eugenics as “that branch of learning which deals with all influences that improve the inborn qualities of the race.”

The basic thought embodied in all eugenic principles is that the breed of man, like the breed of animals or of plants, may be improved by conscious selective processes and is by no means new. Early Chinese literature carries this thought, and the preachments of the Greek philosopher, Plato, on this topic are well known. The mass of scientific, experimental work done in the realm of pure biology by such painstaking and lucid thinkers as Darwin, Mendel and others created a surer foundation upon which eugenists might build. The eugenist, if he is to build lastingly, must see to it that his tap-roots dip deep down into biological soil. With equal force does this apply to all interested in the uplift and betterment of the human race—the lawmaker, the physician, the philanthropist or what not. Beyond all doubt, the urge to consciously improve the human stock, at least through a negative approach by elimination of the heritable unfit, is here to stay and constitutes one of the major sociologic and economic problems of this and future generations. Already some twenty-seven states of the Union have on their statute books some sort of laws dealing with human sterilisation, with statistics showing up to Jan. 1, 1933, 16,066 human beings rendered unfruitful. Of the states, California, responding to the impetus given the move-

ment by the Human Betterment Foundation under the leadership of Gosney and Popenoe, heads the list with 8,504.

The whole civilised world will watch, with keen interest, the bold experiment just launched by Germany in mass sterilisation where, it is estimated, some 400,000 must soon be rendered unfruitful; the larger portion of these will fall into the group of in-born feeble-mindedness. It is to be noted that this new law in Germany is complementary to rather stringent existing laws dealing with the sterilisation of the chronic criminal, whose status in this country has as yet received small consideration. Of necessity, the machinery for so pretentious a program had to be complex; and consequently has been safeguarded by the creation of some 1,700 Hereditary Health Courts and the sterilising operations done in designated hospitals by properly trained physicians. The estimated cost to the government per operation for the male is twenty marks (\$7.60) and for the female fifty marks (\$19.00); the cost of sterilisation of 400,000 human beings, therefore, is estimated at some 14,000,000 marks (\$5,320,000), as contrasted with the present stupendous annual cost of the hereditary sick of three hundred fifty million marks (\$133,000,000). It is estimated that, after several decades, hundreds of millions of marks will be saved each year as a result of the diminution of expenditures for patients with hereditary diseases. Apparently the impelling motive behind this wholesale attempt to curb the reproductive proclivities of the socially unfit has a purely economic basis; should there be others, they have been cautiously camouflaged within this financial smoke-screen.

The only law now on Alabama's statute books dealing in any way with the subject of human sterilisation is the one authorising the Superintendent of the Partlow State School for Mental Deficients to sterilise any inmate of this Institution when in the opinion of the Superintendent and Assistant Superintendent such procedure is deemed advisable. No such authority or discretionary power is given in the matter of the inmates of the other mental institutions, regardless of the disease or the heritable traits encountered. Through the fiscal year 1933 one hundred and forty-seven in-

mates of the Partlow Institution had been rendered unfruitful prior to their return to civil life.

The seriousness of this problem for each and every state of the Union—in fact for every civilised nation of the globe—is attested by the steady increases in all types of mental disease. Experts in this field conservatively estimate that some four per cent of our population will, at sometime in their lives, require institutional care for some form of mental disease. Both the humanitarian and economic aspects of this question are indeed so gigantic as to attract the interests of all; and especially should this whole question of human betterment via the eugenic and sterilisation route make a peculiar and lasting appeal to every physician. In the practical application of any plans evolved, as well as in the formulation of such plans, if they are to incorporate sound biologic principles and to prove ultimately successful, free use must be made of the storehouse of information and of the trained personnel embodied in the medical profession, to which must be delegated the final word both in execution and in decision of each and every case.

J. N. B.

QUININE AND SYNTHETICS IN MALARIA THERAPY

Of the many drugs which have been tried in the treatment of malaria, quinine alone has won a safe and abiding place in the therapeutic armamentarium. Despite the specific action of quinine in malaria, efforts toward improving therapy continue and recently two new and promising preparations have been introduced. Both of these drugs, plasmochin and atabrine, are synthetics. Plasmochin was developed in 1915 and has been extensively used since 1926 while atabrine has been marketed for only a very short time. Russell¹, Director of Malaria Investigation of the Bureau of Science in Manila, has recently recounted his experiences, clinical and experimental, with these new anti-malarials, both when used singly and in combination with quinine, and has made an extensive review of the literature also.

1. Russell, Paul F.: Plasmochin, plasmochin with quinine salts and atabrine in malaria therapy, *Arch. Int. Med.* 53:309 (Feb.) 1934.

Russell states that plasmochin alone is less efficacious and more toxic than plasmochin in combination with quinine salts. "It is now generally agreed that the only justifiable use of plasmochin simplex (plasmochin without quinine) is in instances in which quinine is contraindicated, as at times in blackwater fever, in pregnancy, or in the presence of idiosyncrasy." He adds that plasmochin simplex must always be given under close medical supervision for pallor, cyanosis, nausea, gastric pain, headache, vertigo, epistaxis, weakness and hemoglobinuria may occur. Plasmochin and quinine combined, it seems, can be given with safety to the great majority of patients with malaria and there will be very few toxic results. This combination of the two drugs shortens the period of illness, rapidly reduces the size of the spleen, and greatly reduces the number of relapses. "In fact, the usual 50 per cent rate of relapse in groups of laborers with benign tertian malaria after treatment with quinine is reduced to only 2 or 3 per cent when plasmochin is added to the quinine." It is also recommended that "no plasmochin be given to persons suffering from diseases of the kidneys, liver, or circulatory system".

Though favorable reports have been received regarding it, Russell says that "information concerning atabrine is scanty, and the use of the drug must be considered as still in the experimental stage".

Every practicing physician has struggled with cases of malaria which responded poorly or not at all to quinine and many are aware of the toxic effects of plasmochin simplex. Therefore the conclusion drawn by Russell is welcome and heartening—"It is concluded that plasmochin is not a substitute for quinine but an adjunct to it. Quinine and plasmochin given in combination represent a distinct advance in malaria therapy."

"Not all cases of malaria are alike, and treatment should be given according to the characteristics of the plasmodium involved. Some patients react better to quinine; others, to plasmochin; others, perhaps, to atabrine. Plasmodia differ in their susceptibility to drugs according to stage of development, strain and species. Intelligent therapy will make use of these differences."

W. W. W.

TRANSACTIONS OF THE ASSOCIATION

TRANSACTIONS OF THE SIXTY-SEVENTH CONSECUTIVE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, HELD AT BIRMINGHAM, APRIL 17-19, 1934.

First Day, Tuesday, April 17

The Medical Association of the State of Alabama convened in the ballroom of the Tutwiler Hotel and was called to order at 9:00 A. M. by the President, Dr. J. R. Garber of Birmingham.

Address of welcome was delivered by Dr. George S. Graham, President of the Jefferson County Medical Society, host to the Association.

A Symposium on Bronchiectasis was opened by Dr. A. W. Blair, University, who dealt with the pathology of the disease; Dr. E. G. Givhan, Jr., Birmingham, discussed the etiology, symptomatology and treatment of the condition.

The pathology of Anemias of Early Infancy was presented by Dr. George S. Graham; Dr. Hughes Kennedy, Birmingham, discussed their etiology and symptomatology; and Dr. C. E. Abbott, Tuscaloosa, outlined treatment.

The last paper of the morning session was read by Dr. J. P. Collier, Birmingham, on "Common Indications for Splenectomy: With Case Reports."

Afternoon Session, Tuesday, April 17

A Symposium on Stomach and Duodenal Ulcer was presented as follows: Etiology and symptomatology, Dr. E. S. Sledge, Mobile; x-ray diagnosis, Dr. I. M. Gravlee, Mobile; medical management, Dr. Seale Harris, Birmingham; surgical management, Dr. Lloyd Noland, Fairfield.

The afternoon's program was concluded with a Symposium on Hematuria, Dr. A. S. Frasier, Dothan, discussing its etiology, symptomatology and diagnosis; and Dr. Brannon Hubbard, Montgomery, its medical and surgical treatment.

Evening Session, Tuesday, April 17

Dr. J. A. Myers, Minneapolis, read a paper on the "Diagnosis, Treatment and Prevention of Tuberculosis."

Dr. W. M. Salter, Senior Vice-President, Anniston, presented the President of the Association, Dr. Garber, who delivered an address on "The Physician as Scholar and Statesman."

The President resumed the chair and introduced Dr. J. R. McCord, Atlanta, who discussed "Syphilis and Pregnancy."

Second Day, Wednesday, April 18

The session was called to order at 8:45 A. M., whereupon President Garber read his "Message" which was referred, without discussion, to the Board of Censors. The message follows:

The President's Message

Again acknowledging the signal, generous and distinguished honor conferred upon me last April by the doctors of Alabama, may I not quote, in part, my words upon assuming the Presidency of this Association? "I cannot but feel you have veiled a call to service in your courteous consideration. But, the call cannot be answered single handed. At this very earliest possible moment I ask your sympathetic and willing cooperation, I beg your indulgence, I plead for your counsel. With this team work . . . we shall lead ourselves against disgruntled forces, against the inanities of a morbid psychology to a complete and glorious victory."

Today in unison with others, I report upon the stewardship for the past twelve-month period, setting forth, in the main, that whatever accomplishment has been attained has resulted from a magnificent and wholesome cooperation on the part of the membership of this Association. And, indeed, the labors of your elected officers and of appointed committeemen would have availed little but for the team work between members, every officer and committeemen. However, leadership is necessary, organization is essential, establishment and promulgation of policies is the *sine qua non* of action and progress. These requirements have been furnished in a forceful and maximum degree by those delegated definite tasks to perform, including in this group all committeemen and the Vice-Presidents. To all of these valuable and indispensable agents an immeasurable score of success is attributable and in publicly recognizing the extent of their services, I commend their several reports for your serious and sympathetic consideration.

These reports represent the objectives and have the hearty and unstinted endorsement of the titular head of the present administration. Again, may I not remind you that the scope and success of the program has been too large and too all-inclusive to have been recorded by any one individual and that mass action has made possible the opportunity of presenting to you, on this occasion, what has been

done throughout the year and what is hoped to be the firm foundation of a perpetuated code of a new deal for medicine and its practitioners in Alabama. Of course, every report submitted to this organization is in an advisory capacity and is released only after careful and thoughtful investigation and conference. Your action is final. Time, effort and expense are represented in the reports. I bespeak for your servants a modicum of time and effort, in your review, that the period of this convention will permit.

Let me assure you that every energy has been directed toward holding intact the integrity, independence and dignity of the doctors. Resistance has been offered to the forces attacking from without; positiveness has been the response to quasi-dictation; equity has been demanded from social orders; cooperation has been offered upon terms prescribed by the profession; emphasis has been attached to the significance of doctors as units of society; equalization of civic burden and duty has been advanced and insisted upon. Under such pressure and fiat we have arrived at the gateway of the fortification, should we enter wherein our professional, social and economic welfare will become a plus quantity, wherein we can render a more constructive service to society, wherein we can pursue activities with less agitation and with more zeal. Gentlemen, we must avoid the "ostrich act." We must now enunciate definite policies, we must assume our prerogatives in medical leadership and above all else, we must renounce the fallacy that has grown about our services that they are commodities to be bought and sold upon the stock exchange of life. Failure in this connection will be but an herald of collapse, disappointment and utter loss.

RECOMMENDATIONS

1. *President's Fund*: It is recommended that the sum of seven hundred fifty dollars (\$750.00) be assigned to this officer for the proper conduct of his duties and that of the various committees, which in turn may well be designated his Secretariats. The Medical Association of the State of Alabama is a corporate body in the truest interpretation of the term. With specific duties of administration, specifically defined by our Constitution, to be discharged and at great expense, it is absolutely necessary to provide revenue to meet the same. Further, the President and Committees perform the work for the entire membership and not for themselves. Then, your servants, desirous of an active administration, should not be placed at the crossroads of decision,—either electing to meet expenses for a corporation out of personal funds or electing to default because of disinclination to assume such expense. It is recommended the President have absolute control of expenditures incident to administration under this grant and that annually he submit an itemized report of said expenditures. Should a balance of the appropriation be on hand at the conclusion of his tenure of office, said balance shall revert to the general fund of the Association.

2. *Honorarium for Jerome Cochran Lecturer*: It is recommended that a grant of one hundred

dollars (\$100.00) be set aside annually as an honorarium for the Jerome Cochran lecturer. The Jerome Cochran hour, during the annual convention of the Association, is an institution of, for and by the Association. It is the one memorial that has been perpetuated and it signifies respect, loyalty and affectionate regard for our founder and peerless leader. The guest invited to deliver this lecture is chosen as a man of present day attainments comparable to those of the man that is our custom to honor each year. Such guests are men of affairs, men in demand at home and abroad. The economies of life weigh upon them as upon the average physician. It is proper and considerate that this Association should manifest its appreciation of the Jerome Cochran memorial by granting an honorarium to the lecturer. It is further recommended that this action be retroactive to include the present year, 1834.

3. *Expenses of Delegates to the American Medical Association*: It is recommended that the Association allocate funds to meet the transportation expenses of its delegates to the American Medical Association. Again, your attention is directed to the very obvious fact that the delegates from this Association represent the entire membership at the national assembly and not just themselves. If this Association deems it wise to have such representation, then it should be sufficiently liberal to provide for transportation of those who are selected to transact business for the Alabama doctors in the national body. To be a delegate merely in name and not function because of economic reasons is a blight upon the records of this Association.

Remarks: These fiscal recommendations are made (1) because they represent equity in business; (2) because the statement of the Treasurer warrants these drafts upon the treasury; and (3) because every legitimate means should be employed to place the work of the Association on a plane of sanity and dignity.

4. *Editorial Staff of the Journal*: As at present constituted the Editorial Staff of the Journal of the Association is composed of three members of the Board of Censors, the State Health Officer and the Secretary of the Association. Under such guidance a Journal of unusual merit has been established. The Staff has shown consideration and courtesies to everyone and their problems. However, it remains an organ dedicated to but one arm of the Association, and that is the State Committee of Public Health. It should not be so limited in its scope. The Association has three parts. These are the Judiciary or Board of Censors, the Executive or the Administration (meaning the President) and the State Department of Health. Each unit has its very peculiar service to the Association. Then, each unit should have representation upon the Editorial Board. Problems of each unit should become departmental and publicized under such caption and by the duly authorized leader of the unit. Therefore, be it recommended that the personnel of the Editorial Staff of the Journal of the Association be as follows: a member of the Board of Censors to be designated by the Board; the retiring President, the newly elected President,

the State Health Officer and the Secretary of the Association.

5. *The President and the Board of Censors:* To promote collective and individual interests, to advance mutual and departmental objectives, to harmonize varied activities, to reap maximum results, it is recommended that the State Board of Censors, sitting as such or as a State Committee of Public Health, extend the courtesy of an invitation to the President of the Association to attend such meetings.

It is further recommended that the State Board of Censors extend the privilege of a hearing to any officer or chairman of a committee, or to an authorized designee by the officers or chairmen, in reviewing matters of policy and recommendations submitted by them during the interim between annual conventions of the Association, when such matters might be the occasion of dissenting opinion.

6. *The Medical Practice Act:* With wisdom and foresight, the covenant of the Medical Practice Act has been entrusted to our safe keeping and administration. This Act provides requirements for a certificate of qualification to practice medicine and likewise sets forth equally specific requirements for the revocation of a certificate of qualification to practice medicine. Equity demands an impartial application of both codes of action. It is no incentive for a practitioner of medicine to observe the proprieties of moral conduct while about him professional colleagues observe them in the breach. It is recommended that the Board of Censors, as a State Board of Medical Examiners, invoke upon the truant members of the profession the penalties prescribed by law for wilful and off color acts. Especially is it recommended that immediate and definite action be taken against those doctors who have been convicted of felonies, the same being a matter of public record.

The holocaust of depressed economic circumstances and psychological reactions to the changes in social orders has, to all intents and purposes, provided a license for some members of our Association to depart from the moorings of a standardized code of ethics and morality. Pernicious and dangerous practices of a moral and economic nature are in process and the contagion is approaching uncontrollable proportions. It is regrettable to remark that not all medical practice is entirely free from sordid act and thought. It is undeniably true that such practices lead to adulteration of science and to adulteration of character. Facts, in majesty and in truth, confront us. We must plan. We must act. The mere dismissal of a doctor from the society of organized medicine will not deter and will not suffice. The transgressor of moral and ethical turpitude must look to other powers for forgiveness, for his colleague, observing the letter and spirit of propriety and honorable conduct, cannot forgive him. It is recommended that the Committee on Legislation and Medical Economics prepare an act for legislative consideration giving to the Board of Censors twofold authority,—first, the power to formulate rules governing the conduct of all persons admitted to

practice and, second, the power to invoke the penalty of revocation of license for violation of said prescribed rules and regulations. The present existing grounds for license revocation are too inadequate, too circumscribed, too antiquated to deal with abuses developing in an age of sharp competition, materialism, ostentation, hurry, incompleteness, superficiality, weakness and hypocrisy.

7. *Officers' Franchise:* It is recommended that all officers and chairmen of committees be given the right to vote on matters of policy at the annual convention of the Association. These persons are duly authorized to render annual reports and it is from a sense of fairness that each should be a qualified voter for the express purpose of having the privileges of the floor to argue any legislation submitted. The officers make the studies and contacts and remarks from them should be considered pertinent and proper.

8. *Social Service Agencies:* Throughout the Nation there are many social agencies subsidized by governmental and private interests working toward that eternal Utopia, the betterment of mankind,—yes, toward the apotheosis of humanity. Much of the labor revolves about medical care. Our profession, so indispensable in the attainment of this objective, must join with the various forces in this service. However, no emergency can be so acute, no demand so powerful as to occasion the will and the way of the physicians to be superseded, to be nolle prossed by any other group or groups that are less informed on technical and scientific medical matters. Social service entities and personnels must so deport themselves as to create a friendly and valuable partnership between themselves and doctors,—they must refrain from acts of intolerance, domination and dictation. We are servants, not vassals, of the masses. We know our duty. We will perform our duty. I plead for a cordial entente for our profession and adjunctive social service agencies.

9. *Medical Representation:* In numerous State institutions and relief agencies monies are appropriated or collected for medical services to respective bodies of citizens. The medical services can only be dispensed by practitioners of medicine and, inasmuch as this service is rendered by physicians, it is logical to request that representation on the various boards of control be extended to members of the medical profession. A service so indispensable as that rendered by the medical practitioners demands planning and coordination in the entire scheme of governing bodies of whatever nature that might be involved. It is therefore recommended that the Association make known the desire of the profession of Alabama to be assigned representation upon the Boards of Trustees of State institutions in which medical work is an essential consideration, and State and municipal relief agencies.

With these recommendations I conclude my report. There are to follow more important and more interesting reports from the Vice-Presidents and the several committees.

From this day on, as I move down the highway of life to that milepost at which the last call will be answered, I shall treasure the happy memories that will come from thoughts of the honors and

courtesies that have been conferred upon me by my many friends in the State medical profession. To these items in the scrap-book of memory will be added the memories of happiness that came from the privileged opportunity of contributing my small bit to the advancement of and service to my professional colleagues. The time for my retirement is about at hand. I leave the throne physically but be assured my heart will always be with the welfare of the Association and its members. My services will remain a quantity for command and disposal, for the greatest and most complete joy furnished in life is the opportunity to do something for someone else.

The joint report of the Vice-Presidents, made by the Senior Vice-President, Dr. W. M. Salter, and referred to the Board, follows:

Report Of The Vice-Presidents

The four Vice-Presidents met together twice; in Birmingham on Jan. 25, 1934, and in Montgomery on March 5, 1934. The purpose of these meetings was to suggest to this Association certain measures that we feel would be of value in our future work.

The Vice-President of the Southeastern Division held one meeting,—at Enterprise July 6, 1933. Six papers were read; 64 members attended. During the year he visited some of the counties in his division and found them all low in percentage of membership. He has written many letters but with rather poor response.

The Vice-President of the Northwestern Division has been sick; for the past several weeks he has been confined to a hospital for a good part of the time. We rejoice that he is now on the road to recovery and will soon be able to resume his duties.

The Vice-President of the Southwestern Division held one meeting during the year,—at Monroeville. Four papers were read. The doctors throughout the Division have been taking care of the indigent sick, and have been paid in some cases by the R. F. C. Presidents and Secretaries of societies in the District have been urged to put on a campaign for new members. Very favorable co-operation has been had in this regard. Dallas County is the banner county in the district for members. Of eligible doctors in the county there are but three who are not members of the society. Mobile County is likewise very active, with 96 members and ten eligible non-members. The average attendance at meetings of the society has been 34. Other counties in the Division are more or less inactive; an effort is being made to stimulate them as much as possible.

The Northeastern Division held two meetings, the first in Talladega in July 1933 and the second at Anniston on March 13 of this year. Six papers were read at the Talladega meeting. Sixty-four members attended. Seven papers were read at the Anniston meeting. Fifty-eight members were in attendance. Fifty-one letters were written to the Presidents of the seventeen counties of the Division

urging that regular meetings of societies be held monthly. They were urged also to secure all eligible doctors as members by March 1, 1934, to pay the State dues and to see that representation was had through delegates to the annual meeting in Birmingham, April 16, 1934.

Calhoun, Talladega, Etowah and Madison counties have splendid county organizations. Each of these counties has had many scientific programs presented. A special effort has been made to arouse interest in other counties where little has been manifested.

RECOMMENDATIONS

1. In the opinion of your Vice-Presidents, interest in the affairs of the Association is at a low ebb. About 28.6 per cent of the doctors in the State are not members. With serious problems facing the medical profession, every eligible physician should become a member of organized medicine. Since the small minority can thwart the judgment and action of the majority, your Vice-Presidents believe that a special effort should be made to interest non-members in becoming affiliated. Inasmuch as about 10 per cent on the non-membership list have dropped out of organized medicine because of old age or retirement, it is recommended that Article 12, Section 1 of the suggested Constitution for County Medical Societies be amended as follows: A member who has attained the age of 65 and who has been a member of the Association continuously for 30 years, irrespective of place of county residence in the State, shall be exempt from further payment of annual dues to the county society in which he now holds membership.

2. It is recommended further that Article XIV, Section 1 of the Constitution of the Association be amended as follows: Societies with members exempt from annual dues shall be exempt from payment of dues for such ones to the Association.

We believe that an ordinance should be passed at this session to take care of this situation, as it seems most desirable and urgent that the ranks of organized medicine in Alabama be filled with all physicians who are eligible for membership. It is recommended to the Association that, for the current year beginning April 1934, county societies work on the basis of the proposed amendment. It is understood that should the proposed amendments fail of passage at the next annual session of the Association adjustments for 1934-1935 dues will be made by the several county societies on a basis of the then existing economic conditions.

3. Feeling that the interest in organized medicine in Alabama should be stimulated in all possible ways, it is recommended that each Vice-President be permitted to appoint four subchairmen, one for each fourth part of his Division, who would be empowered to arrange for one or two scientific meetings and clinics annually in his section. Each Vice-President would assist in arranging programs and would attend as many meetings as possible.

4. The health of the colored population is of great concern to all thoughtful citizens. Tubercu-

losis and syphilis are prevalent in the race; unsanitary conditions under which negroes live are often a serious menace. The responsibility for the correction of such conditions is the duty of the white race. The health of the one race affects the health of the other. There are many colored physicians who are good citizens and who need instruction and help. In the light of these things it is suggested that in the future an invitation be extended colored physicians to attend meetings of county societies and annual sessions of the Association, when possible and convenient. It is suggested further that the program of the annual meeting be sent them and that a section be reserved for their occupancy.

5. The Vice-Presidents are required by the Constitution to perform many needed duties. Quite an expense is attached to the office if a vice-president is faithful in the performance of duties entrusted to him. He is required to visit many of the apathetic and inattentive county societies at his own expense. He is one of the Association's officers and his expenses should be paid or borne by it. It is recommended, therefore, that, in addition to the expenses now being cared for by the Association, the Vice-Presidents be allowed 5c per mile in attending district meetings and looking after other official business within their respective districts, the total outlay not to exceed \$75.00. An itemized statement shall be sent to the President and Board of Censors annually; and if there is any money remaining it is to revert to the treasury of the Association.

6. The State Department of Health is serving in a most wonderful way. However, complaints are being registered by physicians because of some of its activities, as, for example, the administration of diphtheria toxoid, typhoid vaccine and other biologic agents. In view of these complaints, it is recommended that the Association take cognizance of difficulties which beset private practitioners and the Department of Health in the matter of the administration of diphtheria toxoid and other prophylactic agents. The field of private practice and public health impinge upon each other. Solutions advantageous to all alike must be sought. It is recommended that the Association urge County Boards of Health to study autonomously this problem in relation to their particular needs. It is further recommended that the County Health Units cooperate with private practitioners by refraining from giving service to citizens that are able to pay, or, when in doubt, confer with the family physician whose name can be obtained from the applicant seeking public health or charity service.

The Secretary presented the following report which President Garber referred to the Board of Censors.

Report Of The Secretary

The membership of the Association as enrolled April 1, 1934 is 1,449, a decrease of less than two per cent (1.83%) in the number recorded in my last annual report to you. A year ago the loss over the preceding twelve months was 7.35 per cent. It

is gratifying, therefore, to note the improvement. The total number of physicians in Alabama, according to the rolls, is 1925. Excluding 69 negroes, the membership of the Association represents 78 per cent of this total number—a most favorable proportion. There is reason to believe that the percentage identified will be even greater when the final revision of the rolls is made two months hence. Your Secretary so feels because of efforts exerted by the officers of the Association looking to the affiliation of those eligible and worthy.

The Book of the Dead must needs have its yearly accessions. To it have been transferred the names of Life Counsellor, Henry Green; Active Counsellor, G. H. Moore; and members L. B. Allen, L. R. Boyd, W. S. Geddes, O. E. Newton, Thos. E. Snoddy, Geo. C. Williams and F. R. Yarbrough. Dr. Green, a counsellor for nearly 34 years, was President of the Association in 1917. His passing, as is that of our fellow members, is recorded with regret.

At the last meeting of this body, Drs. F. L. Abernethy, T. J. Anderson, W. L. Cowles, W. A. Gresham, S. E. Jordan, Samuel Kirkpatrick, W. A. Lewis, John A. Martin, S. C. Meigs, L. D. Parker, J. D. Perdue, Groesbeck Walsh and W. D. Wood were chosen Counsellors-Elect. Dr. Meigs declined the honor subsequent to the meeting. The remainder have qualified and at the proper time should be added to the Roll of Active Counsellors.

The following officers are to be elected at this meeting: A president, a vice-president for the Northeastern Division, a secretary, two members of the State Board of Censors for five years to succeed Dr. M. Y. Dabney, whose term has expired, and Dr. J. D. Perdue, ad interim appointee; and counsellors as follows: three to succeed T. J. Brothers, H. T. Heflin and H. J. Sankey, who are to be elevated to Life Counsellors; three to succeed W. H. Hutchinson, E. L. Kelly and S. C. Meigs, resigned; one to succeed G. H. Moore, deceased; and nine to succeed W. H. Greer, C. P. Hayes, J. P. Hayes, Sydney Leach, Clarence Long, E. D. McAdory, J. A. M. Nolen, E. M. Thomas and M. J. Williams, who have completed their second terms of seven years. According to constitutional provision, it will be the duty of this body, at the appropriate time, either to re-elect these counsellors or to fill any vacancies created.

By action of the Association at its 1933 session, committees were created as follows: Legislation and Medical Economics, Mental Hygiene, Maternal and Infant Welfare, Prevention of Cancer, and Prevention of Blindness and Deafness. Appointments made thereon by the President have been published from month to month on the second cover page of the Journal. It will be sufficient now to direct your attention to those whose terms of service will expire with this meeting:

Mental Hygiene—J. A. Becton

Maternal and Infant Welfare—J. M. Weldon

Prevention of Cancer—J. T. Ellis

Prevention of Blindness and Deafness—H. B. Searcy

It will be the privilege of the incoming president to fill these vacancies and to appoint a delegate to the American Medical Association to suc-

ceed Dr. C. A. Grote, whose alternate is J. Harold Watkins.

Finally, it should be noted that the Secretary's office has had the privilege of cooperating with the President and Committee Chairmen in issuing during the year circulars of information to the members of the Association. This and any other service it stands prepared to render. To these officers and others who have so cheerfully assisted, your Secretary express his indebtedness.

Respectfully submitted,
Douglas L. Cannon, Secretary.

The Treasurer of the Association, Dr. J. U. Ray, rendered the following report which was referred to the Board:

Report Of The Treasurer

Association Year 1933-1934

FINANCIAL STATEMENT

GENERAL ACCOUNT

Receipts

Cash brought forward from last report	\$ 8,291.28
Dues from 97 counsellors (Exhibit A)	970.00
Dues from county societies (Exhibit B)	3,864.00
Delegate fees (Exhibit C)	536.00
Interest on daily balance	124.36
Miscellaneous receipts	1.00
<i>Disbursements</i>	
Badges	\$ 33.71
Brown Printing Co., Bound Volumes, Journal	7.50
Brown Printing Co., Programs	32.50
Brown Printing Co., Receipt forms, etc.	32.02
Brown Printing Co., Stationery	158.16
Brown Printing Co., Transactions	554.77
Expense of division meetings	86.28
Postage—Secretary's office ..	102.75
Treasurer's office ..	26.38
Premium on Treasurer's bond ..	25.00
Salaries—Secretary	600.00
Treasurer	300.00
Special appropriation to Journal	1,000.00
State Board of Health—Stationery	3.30
Stipend to assistant in registration	12.50
Subscriptions to Journal (members and counsellors) ..	2,770.00

\$13,786.64 \$ 5,744.87

Balance cash on hand

\$13,786.64 \$13,786.64

Recapitulation

Cash on hand	\$ 8,291.28
Total receipts for year	5,495.36
	\$13,786.64

Total disbursements for year 5,744.87

Balance cash on hand \$ 8,041.77

Exhibit A

Counsellors and Counsellors-Elect Remitting Dues

Abernethy, F. L.	Long, Clarence
Acker, P. J. M.	Lull, Cabot
Alison, S. B.	Martin, J. A.
Anderson, T. J.	Martin, J. C.
Ashcraft, V. L.	Mason, E. M.
Bailey, E. B.	Mason, J. M.
Beard, R. B.	Mayer, K. A.
Bedsole, J. G.	McAdory, E. D.
Brothers, T. J.	McCall, D. T.
Burdeshaw, S. L.	Miller, W. T.
Caldwell, E. V.	Moore, D. S.
Cannon, D. L.	Moore, G. H.
Chandler, J. C.	Moxley, J. B.
Chenault, F. L.	Newman, S. H.
Cowles, W. L.	Noel, W. E.
Craddock, F. H.	Noland, Lloyd
Crutcher, J. S.	Nolen, J. A. M.
Cryer, G. A.	Oswalt, G. G.
Dabney, M. Y.	Parker, L. D.
Doughty, M. E.	Perdue, J. D.
Dowling, J. D.	Price, A. B.
Dupree, M. W.	Ralls, A. W.
Garber, J. R.	Redden, R. H.
Gragg, V. J.	Rountree, W. S.
Granger, F. G.	Rucker, E. W.
Greer, W. H. (32-34)	Sankey, H. J.
Gresham, G. L.	Scott, W. F.
Gresham, W. A.	Searcy, G. H.
Hagood, M. H.	Searcy, H. B.
Hatchett, W. C.	Shaddix, M. L.
Hayes, C. P.	Shropshire, C. W.
Hayes, J. P. (32-33)	Sledge, E. S.
Heflin, H. T.	Smith, R. A.
Hendrick, W. B.	Speir, P. V.
Hill, R. L.	Tankersley, Jas.
Hollis, J. S.	Taylor, W. R.
Hough, J. S.	Thomas, E. M.
Howell, W. E.	Waldrop, R. W.
Hubbard, T. B.	Walker, A. A.
Jackson, A. A.	Walls, J. J.
James, N. G.	Walsh, G. H.
Jordan, S. E.	Ward, H. S.
Kelly, E. L.	White, A. L.
Kirkpatrick, S.	Wilkerson, F. W.
Leach, Sydney	Williams, M. J.
Lester, B. S.	Williamson, G. W.
Lewis, W. A.	Wood, W. D.
Lightfoot, P. M.	Wright, D. H.

Exhibit B

County Society Dues Collected at 1933 Meeting

Autauga	\$ 12.00
Baldwin	27.00
Barbour	33.00
Bibb	27.00
Blount	30.00
Bullock	24.00
Butler	42.00

Calhoun	108.00	Barbour	8.00
Chambers	48.00	Bibb	8.00
Cherokee	9.00	Blount	8.00
Chilton	24.00	Bullock	8.00
Choctaw	27.00	Butler	8.00
Clarke	18.00	Calhoun	8.00
Clay	21.00	Chambers	8.00
Cleburne	9.00	Cherokee	8.00
Coffee	39.00	Chilton	8.00
Colbert	39.00	Choctaw	8.00
Conecuh	15.00	Clarke	4.00
Coosa	12.00	Cleburne	4.00
Covington	45.00	Coffee	8.00
Crenshaw	36.00	Colbert	8.00
Cullman	33.00	Conecuh	8.00
Dale	24.00	Coosa	4.00
Dallas	111.00	Covington	8.00
DeKalb	51.00	Crenshaw	8.00
Elmore	48.00	Cullman	8.00
Escambia	33.00	Dale	8.00
Etowah	123.00	Dallas	12.00
Fayette	21.00	DeKalb	8.00
Franklin	45.00	Elmore	8.00
Geneva	42.00	Escambia	8.00
Greene	12.00	Etowah	8.00
Hale (1932-1934)	36.00	Fayette	8.00
Henry	21.00	Franklin	8.00
Houston	72.00	Geneva	8.00
Jackson	36.00	Hale	8.00
Jefferson	966.00	Henry	8.00
Lamar	24.00	Houston	8.00
Lauderdale	57.00	Jackson	8.00
Lawrence	24.00	Jefferson	28.00
Lee	57.00	Lamar	8.00
Limestone	24.00	Lauderdale	8.00
Lowndes	12.00	Lawrence	8.00
Macon	27.00	Lee	8.00
Madison	66.00	Lowndes	8.00
Marengo	30.00	Macon	8.00
Marion	27.00	Madison	8.00
Marshall	39.00	Marengo	8.00
Mobile	258.00	Marion	8.00
Monroe	36.00	Marshall	8.00
Montgomery	207.00	Mobile	12.00
Morgan	60.00	Monroe	8.00
Perry	21.00	Montgomery	16.00
Pickens	27.00	Morgan	8.00
Pike	45.00	Perry	8.00
Randolph	33.00	Pickens	8.00
Russell	6.00	Pike	8.00
Shelby	42.00	Randolph	8.00
St. Clair	33.00	Russell	8.00
Sumter	27.00	Shelby	8.00
Talladega	54.00	St. Clair	8.00
Tallapoosa	33.00	Sumter	8.00
Tuscaloosa	117.00	Talladega	8.00
Walker	93.00	Tallapoosa	8.00
Washington	12.00	Tuscaloosa	8.00
Wilcox	30.00	Walker	8.00
Winston	27.00	Washington	8.00
		Wilcox	8.00
		Winston	8.00

Exhibit C

Delegate Dues Collected at 1933 Meeting

Autauga	\$ 8.00
Baldwin	8.00

Clay, Greene and Limestone did not remit dues for delegates.

Clarke, Cleburne and Coosa remitted for one each.

JOURNAL ACCOUNT

April 1, 1933-March 30, 1934

Receipts

Advertising	\$2,400.04	
Balance on hand	315.38	
Journals sold .....	.30	
Special appropriation	1,000.00	
Subscriptions—Members	2,770.00	
Non-members	6.00	\$6,491.72

Disbursements

April number	388.31	
May number	330.70	
June number	374.86	
July number	329.81	
August number	424.25	
September number	336.19	
October number	358.32	
November number	311.45	
December number	322.63	
January number	355.45	
February number	273.09	
March number	381.67	\$4,186.73
Postage	30.00	
Reporter—1933 meeting	263.54	
Reprints	9.74	
Salaries—Ohme, clerical	385.00	
Ray, fiscal	100.00	
Wilkerson, editorial	250.00	1,038.28
		\$5,225.01
Balance cash on hand		1,266.71
		\$6,491.72
		\$6,491.72

Recapitulation

Receipts	\$6,491.72	
Disbursements	\$5,225.01	
Balance cash on hand	1,266.71	
	\$6,491.72	\$6,491.72

REPORTS OF COMMITTEES

Committee of Publication

Fred Wilkerson, Chairman

During the twelve months' period, April 1, 1933—March 31, 1934, sixty-four articles contributed by members of the Association and guests at its last annual session were published in the columns of the Journal. Concurrently thirty editorials were entered. Since the character of the publication rests in largest measure on these features, the Editorial Staff wishes to enlist your further support in its endeavor to give you a worthy Journal.

In discharging its second responsibility, the Committee of Publication distributed copies of the proceedings of the 1933 meeting to all members of the Association, the proceedings being a reprint from the Journal.

The financial aspects of these items have been dealt with in detail in the Treasurer's report.

Legislation and Medical Economics

A. L. Glaze, Chairman

This standing Committee on Legislation and Medical Economics was created by the Association at the annual session in 1933 upon the recommendation of the Board of Censors, which, in keeping with certain suggestions made by the President, Dr. Kirkpatrick, suggested its establishment to-

gether with that of other committees in order (to use the words of the Board) "to keep pace with modern progress¹."

ORGANIZATION

By order of the President, Dr. James R. Garber, acting under the provisions of paragraph 6 of the ordinance providing for the organization of standing committees, the Committee has been organized as follows:

1. The Chairman's Office: This maintains a library of medical and lay publications containing matters pertinent to the work of the Committee.

This office has a part-time clerical force which handles correspondence, etc. Sufficient office equipment has been secured. The Committee has a well kept file in the Chairman's office. In excess of 800 communications dealing with Committee business are on file. More than 10,000 pieces of mail have been mailed by the Committee.

2. The Committee as such has been organized. One active member in each congressional district of the State was appointed by the President, in accordance with the ordinance establishing the Committee. The President, the Chairman of the Board of Censors, and the State Health Officer are ex-officio members.

By-laws governing the deliberations, elections, and certain acts of the Committee have been adopted by the Committee. Approval by the Association is hereinafter recommended.

The Committee has served as a part of the administrative set-up of the President's office, working for the Association under his immediate orders, and functioning under his supervision².

Amendment of the ordinance of the Association providing for the creation of standing committees is hereinafter recommended, in order to even more clearly define the relation of the standing committees to the President's office.

3. District Committeemen: In part, the work of district committeemen was planned as follows: All are to work under the President of the Association in two capacities, namely, (a) as members of the Committee at large, performing duties common to the entire Committee; and (b) as district committeemen. General duties are those of the Committee as a whole, to be later explained. As district committeemen the following duties were assumed: (1) District Committeemen hold themselves ready to visit medical meetings in the societies of their district when invited; (2) to assist in handling pertinent problems arising in the districts, when such problems are referred to them; (3) to co-ordinate society activities looking to mutual accomplishments, as, for example, the promotion of certain legislation; (4) to maintain communication with physicians and societies in the district; (5) to cooperate with the Bureau of Legislation and Public Relations; (6) to make suggestions and criticisms to the Chairman, the President, and other officers of the Association; (7) to attend

1. Transactions, M. A. S. A., 1933, p. 21.

2. See paragraphs 1 and 6 of the ordinance governing organization of standing committees, Constitution, M. A. S. A. p. 52.

Committee meetings; (8) to become authorities upon legislation and medical economics, with especial reference to the problems of their districts; (9) to collect periodicals, clippings, etc., for the library on legislation and economics of the Association; (10) to make an annual report of activities to the Chairman, to be incorporated in the annual report of the Committee to the Association.

4. Two sub-committees composed of one member each (members of the Committee) have been established. These established by vote of the Committee, are known, respectively, as the *Bureau Of Legislation And Medical Statistics* and the *Bureau Of Public Relations*. Dr. John Martin, of Montgomery, was appointed Director of the Bureau of Legislation by the Chairman. The Chairman of the Committee has acted as Director *Pro tem* of the Bureau of Public Relations.

Duties of the Bureau of Legislation and Medical Statistics: (1) The Director shall qualify as an expert in the fields of medical legislation; (2) the Bureau shall maintain a fact-finding and fact-recording department; (3) a library containing the publications of the American Medical Association and its Bureaus on matters pertinent to the duties of this Bureau will be kept, as well as other competent sources of information on medical legislation, national and local, and allied issues; (4) later, it is hoped, a loan service will make such material available to members of the Committee and Association members; (5) the Director shall serve as a contact man with the legislature when in session; and keep the profession informed concerning pending legislation of interest to it; (6) it shall originate desirable legislation and, upon approval of this by the Association, shall (7) work for its passage after seeing that it is presented to the Legislature, acting always under the orders of the President of the Association. (This shall not apply to legislation dealing with public health problems except that the Bureau shall cooperate fully with the State Health Officer when that official requests his aid in promoting legislation dealing with purely public health matters.); (8) the Bureau of Legislation maintains contact with the Chairman's office; furnishes him reports when the same are requested. All Committee business dealing with local and national legislation shall be cleared through the Bureau of Legislation; (9) all expenses of this Bureau have, during the past year, been borne in large part by the private purse of the Director.

Duties of the Bureau of Public Relations: (1) This has been the voice of the Committee; (2) it has served to correlate publications emanating from the President's office. By his order, all committee releases for publication (except those dealing strictly with medical subjects) have been cleared through it, not only those of the Committee on Legislation and Medical Economics but of the other standing committees as well.

A report of a new committee such as this should define its objectives:

DEFINITION OF OBJECTIVES

The ordinance creating the Committee on Legislation and Medical Economics did not define the

purposes and functions of that Committee specifically, nor set out in detail its duties, beyond those implicit in its title.

The interpretation of its functions and modes of action has been that of the President of the Association. Under his orders, its organization was undertaken on a broad base, with the realization that the tremendous problems coming under its scope and purview could not be dealt with in casual or perfunctory fashion.

The Committee has regarded itself as acting in two capacities: (1) As a fact-finding and advisory body; and (2) as a body to perform active work.

In both capacities it has served, as have the other standing committees, as a part of the administrative office of the President. It has been subject to his orders.

Its mistakes are his mistakes. Its acts have been his acts, as the chosen leader.

The following report of work undertaken will serve to define the scope of its activities.

WORK OF THE COMMITTEE AS A WHOLE

1. Much of the energy and activities of the Committee have been consumed in the labor of organization. This has been effected in large part. Recommendations are made in this report looking to its practical completion.

2. Contact has been established between this Committee and some others of similar character in the various states in the Union.

3. The Committee library receives the State Journals of nine states, those which seem most active in promoting and studying medical legislation and medical economics. These are received on an exchange basis. This has been effected through the cooperation of the Journal of the Association.

4. It is in contact with the Bureaus of Legislation and of Medical Economics of the American Medical Association; both of these have, during the year, rendered invaluable assistance to the Committee.

It has worked in cooperation with the Bureau of Legislative Activities of the A. M. A. to secure national legislation.

Reports of conditions relating to the medical profession in Alabama have been furnished several Foundations (Milbank, etc.) and national professional associations (A. M. A., National Dental Association, etc.)

The Committee submitted to the three candidates for governor a questionnaire dealing with problems of especial interest to the medical profession. Each was requested to furnish a statement of his opinions upon these points.

These, according to Rule and Regulations No. 15 of the Committee, have been mailed to the membership of the Association, without partisan comment, for the information of said members, since publication of them in the Journal was refused by the Editorial Staff and the Board of Censors.

Through its Bureau of Public Relations, the committee requested the Editorial Staff of the Journal to allot it a column, to be entitled, *Committee On Legislation And Medical Economics*, in order

that the Committee might keep in communication with the members of the Association. This was granted.

The Committee, through the Bureau, released monthly communications it believed of interest to the profession, until March 1933. At this time, the Editorial Staff of the Journal established a censorship upon the Committee's column, deleting what matter it considered proper to suppress. Since that time, the Committee has been without free means of communication with the profession of the State, except through the mail at private expense.

The industrial and economic crisis has been studied as it related to the physicians of the State. The national recovery program has offered the problems inherent in the N. R. A. and the C. W. A. Under the able guidance of the President, the Committee has expended much labor and pains upon these, with no valuable result.

State Administrators of national relief programs have worked under an iron-clad national plan which provided for the hiring of professional services for indigents on government relief rolls at fees which were but a fraction of standard rates. The failure of your President and your Committee to find any satisfactory solution to this problem has found a counterpart in the experiences of medical men in all states of the Union.

The Committee has corresponded with the presidents of the county societies touching many problems. Hundreds of letters from the officers of county societies have been received. Cooperation with district members has been fairly good.

At the instance of the President, the Committee, after consultation with competent authorities, has prepared for submission to the Association a plan whereby physicians who, through misfortune, become financially dependent, may, upon application to a committee of the Association, be provided with a set monthly income. It involves the payment yearly of a small sum by Association members on a voluntary basis. Only those so paying would be eligible for benefits in case of disability and dependence. In a word, it is a plan of insurance which would provide an income, not a charity dole, and its machinery would be as follows:

The Committee to represent the Association shall be named by the President and the Chairman of the Board of Censors, the number on the Committee being determined by these officers. Upon naming the original Committee, all members of which will serve until displaced by death, resignation or removal for just cause, the vacancies thus occurring shall be filled by the members of the Committee.

The machinery for operating the Benefit Plan shall be set up by the Committee.

The fund shall remain intact, without any draft upon it except for stationery, postage and printing, for a period of three years and perhaps for five years, this last mentioned limit being determined by the Committee.

The Committee shall render a report to the Association at its annual meetings.

Report of The Bureau of Public Relations

One hundred fifty newspapers of the State have been contacted. The response to this has been, so far as is known, favorable. As a result of this Bureau's activities, editorials and articles have been published in several newspapers of the State in support of such legislation as the new pure food and drug bill before Congress.

The Bureau has sent protests to certain newspapers calling attention to what it considered fraudulent advertising inimical to the best interest of the physicians and the public.

The Bureau of Public Relations has contacted the *Better Business Bureau* of at least one city, calling attention to similar matters.

Documental data relating to certain fraudulent advertising have been furnished one newspaper.

The Bureau has aided in coordinating the work of the officers and the Committees serving under the President. This was undertaken at his orders. It has established machinery to handle material submitted to it for publication by members of the Association or by committees in the office of the President. It has facilities for editing such copy when it is requested.

The Bureau, by order of the President, has arranged for handling the publicity of the present meeting of the Association.

Report Of The Bureau Of Legislation And Medical Statistics

In the sixty years of its existence the Medical Association of the State of Alabama has concerned itself principally in increasing the scientific knowledge of its members and in promoting a system of public health. Matters of legislation, protection against non-licensed practitioners, moulding of public opinion along sound lines to favor doctors, and the development of public health activities have been largely left to the President of the Association and other selected officials.

As Dr. Kirkpatrick has so truthfully stated, "We have an organization but we are not organized. We are individualistic by education and training but we must have an organization of individualism which will make for greater efficiency".

Any attempt to cope with the rapidly changing social order must be done through an organization united in thought and effort and with definitely constructed plans upon which to make its stand. With this thought in mind, the Bureau initiated a survey of some of the problems confronting the physicians of this State. Replies were received from 217 physicians in 55 counties. Tabulations were made of 209 schedules, the others being excluded because the physicians were serving as county health officers or were not in practice. The striking findings of this survey are as follows:

1. The average gross income of 187 physicians giving the information was \$3,722.15.
2. The percentage of charity work excluding that for federal and local relief agencies done by 192 physicians was 37.7.
3. The percentage of practice of physicians for persons on federal or local relief, for which no pay was received, varied widely in different counties.

Roughly, the returns would indicate that this percentage would be nearly 90 per cent.

4. Malpractice insurance was carried by only 38 per cent of the doctors. Physicians carrying such protection lived almost exclusively in the counties with large cities or at least with a large industrial population.

5. Fifteen per cent of the physicians reported malpractice suits at some time during their professional career. Six such suits were reported during 1933, that is, 2.9 per cent of the doctors reported suits during the past year.

Certain pertinent facts brought out in this study should receive careful and thoughtful consideration by the Association.

1. Certain taxes, State, county and municipal, are discriminatory against a select group of citizens, who, after paying such taxes are further expected to treat a large group of other citizens without compensation.

2. Nearly thirty-eight per cent of the practice of the physicians in Alabama is charity work.

3. Over ninety per cent of the work done for federal and local agencies was without compensation.

4. Malpractice suits are becoming sufficiently common to put the physicians on guard and to make necessary adequate provisions for protection from this source.

Certain recommendations having an important legislative bearing will be submitted through the Chairmen of other standing committees. This Bureau desires to direct attention to this phase of these reports and to express the hope that careful consideration will be given to these legislative suggestions. This Committee feels that within this sphere lies one of the most important services which it can render and that our law makers should welcome the views and opinions of the medical profession on all topics of a scientific or technical nature which are likely to claim legislative action.

A bill providing for a lien law which shall give physicians, hospitals, nurses, etc., lien rights upon accident insurance and other designated resources of such patients, when treating emergency cases injured accidentally, is necessary. A copy of the bill in question is submitted herewith for the approval of the Association.

The Bureau of Legislation in behalf of itself and the Committee on Legislation and Medical Economics as a whole is indebted to Dr. Kirkpatrick, of Selma, who is responsible for this bill. Judge Hobbs, his attorney and a warm friend of the profession, has our thanks for the legal work done on it.

Physicians, as a group, and because of their training, culture and intimate relationship with all classes of people, should bestir themselves into taking a keener and livelier interest in all social, economic and political activities, both local, State and national. Only by so doing will they be able

to wield the influence and power which, rightfully, they should.

RECOMMENDATIONS OF THE COMMITTEE

1. The Davidson Resolution—At the 1933 session, anent the disposition of this resolution, a substitute motion of Dr. F. L. Chenault was adopted. This provided for submitting the resolution in question to the Committee on Legislation and Medical Economics for study with a view to "formulating a plan", which should be submitted to the State Board of Censors.³

This Committee recommends adoption of the Davidson Resolution by the Association when and if it is amended as follows: Instead of the last paragraph of same, which reads, "Resolved, 3rd. That this Association recommend to its members that no new or revolutionary departures from our present forms of practice be considered", substitute the following: "Resolved, 3rd. That the Association recommend to its members that no revolutionary changes from accepted forms of medical practice be attempted without careful consideration and approval of them by this Association." (Note: This has the approval of the author of the resolution).

2. The Committee recommends to the Association that it encourage its members to take an active part in civic affairs and in government.

3. Physicians complain to the President and to this Committee that no doctor is on the Boards of Trustees of the State institutions; that important welfare boards which expect doctors to work for them free of charge have no representative from the medical profession.

This is not surprising. The fault lies with the profession. It cannot be corrected by complaint. The doctor must actively take part in the civic and governmental life of the people, if he wishes to hold place in the management of their affairs.

4. The Committee recommends to the county societies that one meeting a year be devoted to some phase or phases of legislation and medical economics.

5. The Committee recommends to the Association that it go formally on record as approving the precedent established during the past year by the President, in divorcing the administrative affairs of the profession from the State Department of Health in fact as in theory. It recommends still further autonomy and self-determinism on the part of the profession, looking to relief of the State Health Officer from the double burden imposed by past precedent and custom.

6. The Committee respectfully urges official recognition by this Association of the fact that the attitude of the federal government toward payment of doctors for services rendered indigents on government rolls deserve condemnation. Appealing to the profession through the medium of its official Journals to play a patriotic part in time of stress, officially and in fact government regulations guiding State Relief Administrations placed

3. Transactions, M. A. S. A., 1933, p. 22.

the matter of payment on a trading basis, offering, as the sole reason why fees should be reduced to a niggardly fraction of standard fees, the fact that payment was certain and reasonably prompt.

7. It is recommended that the President's recommendation of changes to be made in the editorial management of the Journal be carefully considered and approved. The standing committees and other branches of the President's office, including the President himself, if placed under a censorship and cut off from the profession, can serve it but badly. The physicians of the State should have the right to decide for themselves whether they like or do not like what their chosen representatives have to say to them.

8. It is recommended that in its discretion this Committee be allowed to mail circular communications of general interest to non-members—for example, knowledge of the Committee's work on A. R. A. fee schedules, etc., went only to members. Probably a large part of the relief work was done by non-members. Some of these might have been influenced to cooperate).

9. Approval of the Bureaus of the Committee by the Association is recommended.

10. Approval of the Committee organization, its Rules and Regulations, and its objectives and modes of working, as prescribed by the President, is asked for.

11. It is recommended that paragraphs 6 and 7 of the ordinance providing for the organization of standing committees (p. 52 of the Constitution) be amended to read as follows:

Par. 6. It shall be the duty of the Chairman of said Committees to give the President such information and reasonable assistance as he may request in the conduct of the business of the Association, since such Committees are considered as, and are hereby expressly declared to be a part of the administrative department of the Association; they shall serve the Association through the executive office of the President, to whose administrative office they properly belong, and under whose orders they shall serve, in the interim between the annual sessions of the Association.

Par. 7. The expenses of the Committees shall be defrayed by allowances made the Committees by the President, from the fund set apart and appropriated by the administration for the use of the President in conducting his administrative office, when and if, this is done. Each Committee Chairman shall submit an itemized expense account with the annual report of his Committee, which shall show expenditures made, balance on hand, etc.

Finally, the Committee wishes to acknowledge its appreciation of the cooperation of the Secretary of the State Medical Association, Dr. Douglas Cannon, who has unfailingly given his support. It wishes to express its thanks for the sympathetic aid of the Chairman of the Board of Censors, one of its ex-officio members, who has constantly lent encouragement to the Committee.

And last, the Committee acknowledges its debt of gratitude to the President, under whom it has served. A leader, an executive, it has been a pleasant task to serve him, and through him, the profession of the State.

Mental Hygiene

Frank A. Kay, Chairman

Your Committee on Mental Hygiene, while not able to report any outstanding achievements for the past year, has nevertheless sought to function in a practical manner. After familiarizing ourselves with our problems and possibilities, we communicated by letter or personal interview with officials of various organizations in the State to whom we could be of service. We thus contacted representatives of the Alabama State Society for Mental Hygiene, the Alabama State Educational Association, the Social Hygiene Council and the Association of Social Workers of Birmingham and expressed our willingness to cooperate with them in any way practical.

We aided the program committee of the State Educational Association in securing several speakers on mental hygiene topics for their annual meeting last March. We have handled with dispatch all communications and matters of business referred to us by various officers of the State Association.

Probably the most practical, valuable and tangible mental hygiene measure being carried out in this State at the present time is the sterilization program by the Partlow State School for Mental Deficients. There, all inmates are sterilized before being discharged from the institution. To date 103 males and 73 females, a total of 176, have been sterilized.

Mental hygiene, while already safely launched, does not yet occupy the position of prominence that its problems justify. Statisticians estimate that four per cent of all children in school attendance will eventually become patients in mental hospitals, unless mental hygiene precautions are taken. One out of every twenty-five persons born will eventually suffer a mental disorder. In every seventh family in the United States there is an individual with mental illness. There are as many beds occupied by mental patients in this country as the number of hospital beds devoted to all of the medical and surgical cases of all kinds combined, including cancer and tuberculosis. From ten to twenty-one cents of every dollar collected by each state for taxation goes to the maintenance of public institutions for the mentally ill.

Mental hygiene is not an intangible evanescent something about which there is only mystery. It is simply preventive medicine applied to mental diseases. It aims to promote mental health and to prevent mental disease and defect. It stands for early recognition and rational treatment along sound practical medical lines. It has focused our attention upon the pre-school and school groups as the golden period of mental hygiene before the youth has become too deeply encrusted with pathologic habits of body and mind. It should be of practical value to education, not only as an

aid in the proper guidance of a child through his school years but in the selection of the teachers in whose care he is placed.

To make sound progress along rational scientific lines mental hygiene must remain in the hands of the medical profession. There are a few signs indicative of danger of the movement passing, at least in part, into the hands of others. We have psychological, habit, vocational guidance, social guidance and educational clinics all doing or trying to do some kind of work in adjusting the misfit to his environment, each emphasizing some particular approach to the problem. We even have people without medical training who call themselves psychiatrists. There appears to be a well defined tendency on the part of many to look upon psychiatry as the great popular playground of medical science. It seems to have a fatal fascination for the uninitiated appealing particularly to lay amateurs.

Medicine will dominate mental hygiene in direct proportion to the contributions of liberal minded medical men in research and the interest and understanding of mental medicine exhibited by the bulk of physicians in practice. The practitioner is the real crux of the situation as he is the central figure in any successful public health movement. Patients and the public look to him for their cues and guidance in preventive medicine. He can give impetus to the movement by a sympathetic attitude or he can retard its progress by ridicule and ignorance of its objectives. He is not expected to be especially qualified or interested in mental diseases but it is essential that he have a sympathetic attitude towards the mental hygiene movement and a certain fundamental knowledge and understanding of its aims and problems. No organization, public or private, no specialist, can take his place in the confidence of the average family. His is a sacred trust and a great responsibility.

We could make any number of recommendations except that to carry them out would mean an additional expenditure of tax monies, and we know that this is out of the question while state, county and city governments are overburdened with their already existing demands. We would, however, keep alive the knowledge of the real need for psychiatric or mental hygiene clinics, particularly in the larger cities of this State.

RECOMMENDATIONS

1. It is recommended that this Committee and the medical profession of Alabama sponsor a more inclusive sterilization law than the one already on our statute books which relates only to inmates of the Partlow State School for Mental Deficients. This law should allow eugenic sterilization of the insane, feeble-minded, epileptic and criminal inmates of our institutions and prisons whose affliction or weakness is likely to be transmitted to descendants.

2. In line with the recommendation made to this Committee by the Bureau of Health and Public Instruction of the American Medical Association, it is recommended that the component county medical societies of this Association, when the

membership is large enough to justify it, establish standing committees on Mental Hygiene.

3. It is recommended that each county society at some time during the year give some meeting or a portion of it to a discussion of or papers on mental hygiene and mental medicine.

4. It is recommended that it become the regular duty of the Chairman of this Committee, soon after his appointment, to furnish to the various organizations in the State, whose interests touch on mental hygiene, the names and addresses of the members of the Committee so that they will be accessible for consultation and advise by these organizations.

Maternal And Infant Welfare

A. E. Thomas, Chairman

During the past year the Committee has confined its work to a study of maternal problems in Alabama and prevention of high mortality. We have tried also to carry out the policies of the previous Committee by endeavoring to cooperate with the health program recently initiated by the Government. Numerous efforts were made to organize prenatal clinics, with the facilities of the Federal Government at hand; but due to the indefiniteness of each relief program, no definite action was taken. However, we have a movement underway whereby we hope to have a clinic in Montgomery in a short while.

At the outset the Committee wishes to thank Dr. W. T. Fales and Miss Margaret Murphy of the State Department of Health for their splendid cooperation in furnishing records and information regarding midwifery in Alabama.

The Committee on Maternal Welfare, in its original report of 1926, directed attention to the fact that "the maternal death rate of the United States in the Birth Registration Area was 6.7 per 1,000 in births in 1923. This rate for Alabama in 1924, based on live and stillbirths, was 8.8 which is 2 per cent greater than the national maternal death rate." For the year 1932, the national maternal death rate was 6.5 throughout the Registration Area. For Alabama it was 7.5, showing a slight improvement.

Three years ago a committee of the New York Academy of Medicine was appointed to investigate maternal deaths. When all facts had been assembled, the Committee arrived at the verdict "that, of the 2,041 deaths, practically two-thirds, or 1,343 could have been prevented, if the care of the women had been proper in all respects. Can anyone with a reverence for motherhood refrain from asking, just how many mothers in our own community are to be sacrificed in this same needless manner in the next twelve months? There was, of course, a variety of reasons for this tremendously high mortality, but there were three main ones: an inadequately trained physician, an ignorant mother and a lack of physical facilities at home or in the hospital to meet some unexpected crisis. For all of these the responsibility rests on no single person and no group of people. It rests on the citizens of each community and on the Nation; that is, on you and me."

In order that we may obtain the same statistical data in Alabama, your Committee, through the cooperation of the State Department of Health and the County Health Officers, is conducting an inquiry into each maternal death, and we earnestly solicit your cooperation and assistance. You will be given this information from time to time through the medium of the State Medical Journal.

In view of the fact that a vast amount of responsibility rests upon the patient and the public, the Committee proposes to carry out in Alabama the program as outlined by the Maternity Center in New York City. This has for its objective a nation-wide campaign to make motherhood safe for mothers, to teach the public the vital importance of adequate maternity care; and to secure, in cooperation with all existing agencies, such care for all expectant mothers. In order to reach this goal they have set aside "Mothers' Day" as the most logical time to strike the enemy. We call upon the President of every County Medical Society to appoint a committee of three men, who are interested in obstetrics, to carry out this program. The State Committee will cooperate by furnishing necessary information.

We suggest that you solicit the support of every organization in your community; for example, in the Mayor's Proclamation for Mothers' Day, insist that he take cognizance of the number of women who lay down their lives in motherhood.

The New York report shows that sixty per cent of the deaths which could have been avoided were brought about by some incapacity in the attendant; lack of judgment, lack of skill, or careless inattention to the demands of the case. Every doctor is familiar with a solution to the above problem. The Committee is trying to render valuable assistance by presenting, in the Journal each month, a short timely article of interest to general practitioners as a whole. Further, we should like to call your attention to the series of lectures being conducted at focal points throughout the State by one of the Nation's outstanding men in obstetrics, Dr. J. R. McCord of Atlanta, who was brought to Alabama through the efforts of our President. We also suggest that one meeting each year be devoted to obstetrical problems, preferably with an outstanding obstetrician presenting a paper.

THE MIDWIFE PROBLEM

We regret to say that, probably due to the economic depression, the number of deliveries attended by midwives has shown an increase. For example, 1932 showed an increase of 3.5 per cent over 1931, and the proportion was already large.

We have no new regulations, but we wish to plead for a strict adherence to the rules adopted by the previous Committee in 1926. Miss Murphy, with the State Department of Health, is doing a splendid work in trying to improve the status of midwife practice but her success will depend upon your cooperation.

We suggest that the Bureau of Vital Statistics adopt a new certificate for stillbirths and neonatal deaths. We feel that the present certificate is not specific enough since most of the questions there-

on are directed toward mature life. A valuable amount of information may be secured by directing the same number of questions to the type of delivery, the maturity of the child and the duration of labor.

The Committee wishes to submit the following recommendations:

RECOMMENDATIONS

1. That the law be so amended as to require but one certificate in the case of a stillbirth; that said certificate be used for reporting the birth and death of children living less than twenty-four hours.

2. That the certificate adopted for the reporting of a stillborn child be designed, with appropriate modifications, after the "Statistical Return For Embryo, Stillborn, Or A Child Having Lived Less Than Twenty-Four Hours", used by the Canadian Government.

3. That in an effort to more truly get at the facts of maternal mortality and to attempt to curb the activities of the criminal abortionist, the Legislature enact such measures and penalties as would require the certification, on specially prepared blank forms, of all terminations of pregnancy prior to the now recognized and reportable age of 5 months; that it be the duty of the County Health Officers to furnish the forms to all physicians of Alabama who engage in the practice of obstetrics; and that it be their further duty and that of the Bureau of Vital Statistics to stress the importance of making such returns and to report to the respective County Boards of Health any physician who habitually neglects or refuses to make such returns.

4. That the recommendations of the interested physician, regarding the adoption of new born infants, be given more consideration by the social welfare agencies now in charge of this work and that the "red tape" routine followed by said welfare agencies be reduced to an efficient minimum.

Cancer Prevention

K. F. Kesmodel, Chairman

As this work was new to your Committee, progress was not as rapid as might be desired. Being ignorant of the manner in which a campaign against cancer should be conducted, some of the better known physicians whose names are associated with this movement were consulted, and also the American Society for the Control of Cancer. The response was all that could be asked. Considerable material was obtained on the subject and methods of its dissemination suggested. The Committee is greatly indebted to the American Society for the Control of Cancer for the help it has given. It has furnished the Committee with material concerning all phases of cancer prevention and control. Dr. J. W. Cox, the Southern Field Representative of the Society, gave many suggestions as to how the work should be conducted.

The Committee met in Montgomery in August of last year to plan its work. Following the suggestion of the retiring President of the Associa-

tion, it was decided to present the program to the physicians first. Each Committee member was allotted certain counties in his neighborhood, he to arrange for a program with each County Medical Society in his district. It was hoped that each Society would be seen before the meeting of the State Association. Although not all have been visited, a majority have been. Others will be seen as rapidly as possible. Each Society was requested to form a local committee on cancer control to work in conjunction with the State Committee. The Committee wishes to take this opportunity to thank the several Societies for the kind reception given its members.

It was decided, in so far as possible, to follow the "Five Year Program" of the American Society for the Control of Cancer. By doing this, the material furnished by this organization would be available for use. The first year is to be devoted to cancer of the breast and the relation of the physician to the cancer patient. An attempt has been and will continue to be made to emphasize the recognition of cancer in the early stage; to recognize and cure precancerous lesions, and to emphasize the advantage of frequent and complete examination of patients in the cancer age.

Certain conditions have come to the attention of your Committee which should be remedied:

First—Incomplete physical examinations. Many patients are seen with advanced cancer of the cervix who have been to physicians previously but who have not been properly, if at all, examined. Too frequently women give history of having gone to a physician because of excessive uterine bleeding only to be told that it was due to "change of life" and to be given a prescription to be taken at stated intervals, no examination being made. Very few women refuse examination. It is therefore the duty of the physician consulted to examine the patient. If the part complained of can be seen, it should be examined visually as well as manually. It is believed that many malignancies will be discovered earlier and many pre-malignant lesions discovered if each physician will give such patients an adequate examination.

Second—The use of "plasters" in the treatment of malignancies. It was a surprise to learn that some physicians practicing in this State use topical applications (plasters) in the treatment of obvious cancer. All, except one, seen thus treated were skin cancer. The exception was a breast cancer. For the past fifteen or twenty years modern writers of the medical profession have advised against the use of caustic applications in the treatment of cancer. It is generally conceded that surgery and irradiation (with either x-rays or radium) are the only acceptable methods of attacking this disease. It is therefore urged that the use of "plasters" as a means of treating cancer of any type be discontinued. It has also been learned that several unlicensed individuals, not of the medical profession, are treating cancer with "plasters" and charging a fee (usually \$50.00 payable in advance) for the treatment. This is done in violation of existing laws and must be stopped. Curable lesions are frequently rendered incurable

by this method of treatment. It is therefore requested that the names of such unlicensed persons, who continue this practice and charge a fee, be obtained and reported to the proper authorities that they may be prosecuted.

Third—There is obvious need for diagnostic clinics to assist physicians in the diagnosis of early and doubtful cases of malignancy. Early cancer is curable. This necessitates early diagnosis. It is therefore suggested that in the larger cities throughout the State a diagnostic clinic for malignant diseases be set up, the physician serving on the staffs of such clinics to be appointed by the medical societies in which said cities are located. It should be the duty of this clinic to convene on specified occasions to examine such indigent patients as are referred to them by other physicians. They should report their findings to the physician referring the case and suggest such treatment as they consider advisable. They should institute no treatment unless requested to do so by the referring physician.

Fourth—There are many who are unable to pay for transportation to such a clinic as referred to above. It is suggested that the State Legislature or each county set aside a fund to be used for transportation of indigent patients to and from these clinics.

Fifth—Many counties are without adequate means for treating cancer patients. It is therefore suggested that such counties pay a *per diem* sum to another county which is properly equipped, for the hospitalization and treatment of such indigent patients. This may be extended to include cases other than malignancies.

Sixth—As the work of any committee entails considerable correspondence, your Committee earnestly appeals for a postage allowance. Intercommunication between members of committees is frequently necessary. Letters from persons in Alabama to the American Society for the Control of Cancer are referred to this Committee and some come direct. It is considered advisable to answer these communications. It is therefore seen that such allowances will be greatly appreciated.

Prevention Of Blindness and Deafness

H. B. Searcy, Chairman

The Committee investigated, from the medical side of the question of blindness and deafness, the State Schools for the Blind and Deaf at Talladega, Alabama, visiting the institution January 7, 1934. Present at that meeting were Dr. H. B. Searcy, Dr. H. F. Martin, Dr. Lucien Brown, Dr. B. B. Warwick and Dr. N. T. Davie of the Committee; Dr. J. R. Garber, Dr. K. W. Constantine, Dr. C. M. Rudolph, Mr. Riddle, the Superintendent of the Schools and Mr. Lewis H. Carris, Director of the National Society for the Prevention of Blindness. We were graciously entertained by the officers of the institution, saw the students and visited the class rooms, dormitories and dining rooms. At a meeting of the Committee, with the guests and officers of the institution, methods of

teaching and needs of the institution were discussed at length.

The Committee met again January 12, 1934 in the home of Dr. J. R. Garber, with the following guests: Mr. L. H. Carris, Dr. F. H. Clements, Dr. LeRoy Woodruff, Dr. J. S. McLester, Dr. J. W. Simpson, Dr. K. W. Constantine, Dr. C. M. Rudolph and Dr. F. A. Kay. The findings of the recent visit to the State Schools for the Blind and Deaf and other work pertaining to the duties of the Committee were discussed.

From the information gained by the work of the Committee on the Prevention of Blindness and Deafness, we offer the following:

FIRST RECOMMENDATION

Whereas, The compulsory educational law of the State of Alabama requires attendance at school of students between the ages of 6 and 16; and,

Whereas, No provision has been made for students with partial blindness or partial deafness in any of the schools of the State or at the State Schools for the Blind and Deaf, we do hereby recommend

1. That special teachers be provided in the Schools for the Blind and Deaf at Talladega, with equipment necessary to teach students with partial blindness and partial deafness, permitting the use of what vision or hearing such students may possess.

2. That provision be made in the State Schools for the Blind and Deaf at Talladega, Alabama, for proper examination and refraction of all students in order that symptoms due to faulty vision may be relieved; especially among the deaf students, many of whom have defective vision correctable by glasses and are unable to learn to read lips or do class room work required because of this correctable defect.

3. That provision be made whereby students who are mentally deficient and a handicap to the teaching of other students may be more easily transferred to the State School for Mental Deficients.

SECOND RECOMMENDATION

Whereas, From a recent survey of students in the Schools for the Blind and Deaf at Talladega, made by Dr. Lucien Brown at the instigation of the school authorities, it was learned that there are many students in the institution with conditions of blindness or deafness that can be corrected, or the vision or hearing greatly improved by refraction, medical treatment, operation and training; that these students with improvable or correctable conditions are educated at great expense to the State for many years and no provision made to give them the advantage of the necessary refraction, treatment or operation; and

Whereas, The State Schools for the Blind and Deaf are purely educational institutions and are not in any way equipped for providing special refraction, treatment or operations, and from the meager allowance by the State for this purely educational work they are not able to go to the addi-

tional expense of providing refraction, treatment or operations necessary, it is recommended

1. That the State of Alabama, through legislative or other means, provide a sum of money sufficient to refract, supply glasses and furnish medical treatment or operations necessary to improve the condition of students already admitted to the State Schools for the Blind and Deaf.

2. That provision be made for yearly examination of all students in the Schools for the Blind and Deaf to determine the cause of the blindness and deafness and whether or not the condition can be improved by medical means.

3. That provision be made for future refraction of and for furnishing glasses, medical treatment or operations to any and all students that may be admitted to the Schools for the Blind and Deaf.

THIRD RECOMMENDATION

Whereas, Many of the students in the Schools for the Blind and Deaf have hereditary defects which they will transmit to their children, it is recommended that all students with hereditary defects be sterilized.

FOURTH RECOMMENDATION

Whereas, The Board of Trustees of the State Schools for the Blind and Deaf consists of lawyers, business men, etc., and believing that were there always a physician upon the Board of Trustees this neglect of the medical side of the question would not occur but that some provision would be made for refraction, for glasses, and for furnishing medical attention and operations, we recommend that a law be passed requiring that there be always on the Board of Trustees at least two physicians in the active practice of ophthalmology and otolaryngology.

FIFTH RECOMMENDATION

Whereas, The compulsory educational law of the the State of Alabama requires that students between the ages of 6 and 16 be sent to school, it is recommended that provision be made by the public school system to furnish specially trained teachers for the partially blind and the partially deaf in all the communities where there are a sufficient number of such children to warrant it (for example, as in Birmingham, Montgomery and Mobile). It is believed that in these communities one teacher, with special equipment, will be a great saving to the public schools by removing from the grades abnormal children who interfere with the teaching of normal students.

It is recommended further that in the communities where the number of partially blind and partially deaf children is not sufficient to warrant a specially trained teacher that such children be sent to the State Schools for the Blind and Deaf at Talladega to be under the care of the teachers specially trained to teach this class of defectives, as soon as these specially trained teachers have been provided.

The reports of the several committees were referred by the President to the Board of Censors.

The Jerome Cochran Lecture was delivered by Dr. Russell L. Cecil, his subject, "The Present Trend in the Study of Arthritis and Rheumatic Diseases".

Dr. D. G. Gill, Montgomery, co-author with Dr. J. G. McAlpine, Director of Laboratories of the State Department of Health, read a paper on "Undulant Fever".

Miscellaneous Business

The following resolution, introduced by the Secretary at the request of Dr. Seale Harris, was referred to the Board:

Whereas, The vicious practice of fee-splitting seems to be spreading, though the great majority of the members of the Medical Association of the State of Alabama are above buying and selling patients; and

Whereas, There are a few criminal abortionists who wantonly commit fetal murder in Alabama; and

Whereas, Fee-splitting and fetal murder are criminal offenses according to the laws of Alabama, punishable by fine and imprisonment;

Therefore Be It Resolved:

1. That the Medical Association of the State of Alabama instruct its secretary to send copies of the State laws relating to the crimes of fee-splitting and fetal murder to each physician licensed to practice medicine in Alabama.

2. That copies of these laws also be sent to the solicitors and criminal court judges in each county in Alabama, requesting them to confer with members of the medical profession relative to the enforcement of laws against fee-splitting and criminal abortion.

3. That copies of these laws be sent to the secretaries of each constituent county medical society of the Medical Association of the State of Alabama, with the suggestion that the Board of Censors consider the punishment by the society of, and where sufficient evidence is available institute criminal charges against, physicians who are known to be guilty of buying or selling patients, or who can be proved guilty of criminal abortion.

The Secretary announced the vacancies in the College of Counsellors and designated a time and place of meeting of committees constitutionally appointed to fill them.

Afternoon Session, Wednesday, April 18

Symposium on Cancer—Plain Talk About Cancer: (a) The Doctor and the Cancer Patient—Dr. K. F. Kesmodel, Birmingham; (b) Potentialities of Skin Le-

sions—Dr. Toulmin Gaines, Mobile; (c) Breast Tumors—Dr. Alston Maxwell, Tuscaloosa; (d) Infection versus Cancer of Female Genitalia—Dr. Neil Sellers, Anniston.

Dr. Groesbeck Walsh, Fairfield, discussed "Atelectasis and Its Relation to Lobar Pneumonia".

Dr. J. C. Bragg, Decatur, presented a paper on "Spinal Anesthesia".

Miscellaneous Business

The following amendments to the Constitution of the Association, offered by Dr. D. L. Wilkinson, Birmingham, were referred to the Board:

Add to Article 6, Section 6 of the Constitution—It is the intent of this Section to exempt Life Counsellors, by virtue of their services, from all future compulsory obligations to either the Medical Association of the State of Alabama or to the County Medical Society to which they may belong, except that they shall be amenable to the County Medical Society to which they belong for either immoral or unprofessional conduct or for malfeasance in office.

Add to Article 6, Section 11—If a Counsellor shall remove from his Congressional District into another Congressional District after 10 years of service as a Counsellor, he shall notify the Secretary of the Medical Association of the State of Alabama, naming the Congressional District, the county and the postoffice to which he has removed. Upon receipt of this notice, it shall be the duty of the Secretary of the Medical Association of the State of Alabama to transfer by certificate the membership of the removed Counsellor to the Medical Society in the county to which the Counsellor has removed, notifying the Secretary of the local County Medical Society of the transfer. The transferred member shall be subject to all the rules and regulations of the Society to which he has been transferred.

Add to Article 11, Section 4—The Secretary of the Medical Association of the State of Alabama, upon receipt of information of the removal of a Counsellor from one Congressional District to another, shall transfer removed Counsellors in accordance with Article 6, Section 11.

Add to Article 14, Section 3—Counsellors shall not be discriminated against by County Medical Societies. Ethical relationship, duties, responsibilities, penalties and fees shall be the same as ethical relationships, duties, responsibilities, penalties and fees of other members.

Dr. James R. Garber made the following request which was referred to the Board:

Incident to the multitudinous duties of the office of President, it befalls the lot of any office

secretary to do much additional work. My secretary, Mrs. Florence M. Brown, has given much time and labor to these duties and I feel it equitable to bespeak for her a modest compensation of \$25.00 for such services. It is obvious I could not attend to the detail of correspondence, filing, etc., and unless my secretary had assisted outside help would have been absolutely necessary at a greater expense. After spending well over \$200 in performing the duties of my office, I feel this request is considerate.

The following resolution was referred to the Board after its presentation by Dr. J. N. Baker:

Whereas, Through the interest and generosity of the Scientific Directors of the Rockefeller Foundation exhaustive studies in soil pollution, conducted by the Health Department at Andalusia, Covington County, Alabama, and extended over a period of five years and with considerable financial outlay, were made possible; and

Whereas, The practical application to public health problems of the established scientific facts growing out of such study will prove of inestimable value not only to Alabama but also to other states of the Union and to every nation; therefore be it

Resolved, That the appreciation and thanks of this Association, the duly constituted State Board of Health of Alabama, be extended to the officers and Scientific Directors of the Rockefeller Foundation for making possible the prosecution of this valuable study through Alabama's Health Department.

Evening Session, Wednesday, April 18

The public meeting of the Association was addressed by Dr. Morris Fishbein, Editor of The Journal of the American Medical Association, his subject, "The Trend of the Times".

Adjournment was followed by a reception and dance at the Highland Park Country Club.

Last Day, Thursday, April 19

Dr. Bert W. Caldwell, Executive Secretary of the American Hospital Association, and Dr. R. G. Leland, Director of the Bureau of Medical Economics of the American Medical Association, presented a "Symposium on Medical Economics".

At 10:30 A. M. the President declared the Association in business session, record of which will appear in full in the August number of the Journal.

(To be concluded.)

Book Abstracts and Reviews

The Management of Fractures, Dislocation and Sprains: By John Albert Key, B. S., M. D., Clinical Professor of Orthopedic Surgery, Washington University School of Medicine; Associate Surgeon, Barnes Hospital, St. Louis Children's Hospital, and Jewish Hospital, St. Louis, and H. Earle Conwell, M. D., F. A. C. S., Orthopedic Surgeon for the Tennessee Coal, Iron and Railroad Company, Birmingham; Orthopedic Chief of the Traumatic and Orthopedic Services of the Employees' Hospital, Fairfield, Alabama; Member of Fracture Committee of American College of Surgeons, and Advisory Editorial Staff of Journal of Bone and Joint Surgery. 1,208 pages with 1,165 illustrations. St. Louis, Mo. The C. V. Mosby Company, 1934. Cloth, \$15.00.

World War wounds, injuries sustained by employees in mechanized industry, and the damage inflicted by automobile accidents have given to traumatic surgery an importance which it has never, in all history, previously occupied.

Key & Conwell's "The Management of Fractures, Dislocations, and Sprains" comes as the response to a demand of the times for a comprehensive work on the treatment of those serious injuries to bones and joints which result from the causes above mentioned.

The arrangement of the work is logical, part one being devoted to "Principles and General Considerations" and part two to "Diagnosis and Treatment of Specific Injuries."

Part one is of great importance, since a lack of knowledge of underlying principles of diagnosis and treatment is the most frequent cause of poor results so often observed.

Industrial organizations are giving adequate care to injured employees, but automobile accidents occur, often, in the most remote places, where skilled help and adequate hospitalization are unobtainable; hence chapters on examination, emergency treatment and emergency splinting and transportation are of great interest.

Likewise, the chapter dealing with fracture equipment and plaster technic is invaluable, whether for the village hospital or for larger institutions. For the individual physician there are valuable suggestions for equipment, both for his automobile and for his office.

Material is well arranged and clearly presented in chapters dealing with the use of the x-ray and the fluoroscope, anesthesia, methods of obtaining reduction, and physiotherapy. The value of physiotherapy is conservatively estimated, and this, in the opinion of the reviewer, is in keeping with most observations.

To be especially noted under "Complications" are those sections on injuries to nerves, blood vessels, and neighboring joints; also those on fat embolism, pulmonary complications, and delirium. This latter is considered under two heads, alcoholic delirium and traumatic delirium of the aged, or of those who have been under prolonged mental strain.

Pathological fractures and compound fractures are well discussed, and there are two very important medicolegal chapters, namely, "The Workmen's Compensation Law Affecting Fracture Cases" and "Medicolegal Aspects of Fracture Cases."

In addition to several chapters dealing with the more serious and complicated injuries, there are to

be found discussions of those common injuries with which surgeons and general practitioners are familiar. Consideration is given to all types of complications, descriptions of many improved methods of splinting and bandaging, and certain original and practical methods of treating specific injuries. For example, Conwell's adhesive plaster dressing for fracture of the clavicle is well illustrated, and its value in maintaining reduction is at once apparent. Likewise, Conwell's method of double strapping of the chest, horizontally around the injured side and vertically over the shoulder, is new to the reviewer and seems definitely advantageous in severe fractures of the ribs and in fractures of the upper ribs.

In that very serious shoulder injury, fracture-dislocation of the head of the humerus, the reviewer believes that attempts at reduction by manipulation hold out so little hope of success that it would have been better advice to the general surgeon to proceed at once with operative intervention and lose no time with manipulative attempts.

In discussing injuries to the thorax, attention is called to massive collapse of the lung, a condition of rather recent recognition, often unsuspected, and frequently overlooked.

The reviewer was specially interested in the description of the application of skeletal traction in fractures of the shaft of the humerus by means of the Kirchner wire passed through the humerus just above the elbow; in certain points in the treatment of Colles's fracture; in the treatment of fracture of the carpal scaphoid, and of dislocations, both anterior and posterior, of the carpal semilunar.

The problem of open operation in simple fractures irreducible by manipulation is discussed in all its bearings, and in a manner which meets with the entire endorsement of the reviewer.

In the lower extremity, the importance of aspiration in injuries about the knee where the joint is distended with blood or synovial fluid is stressed. The frequency of compound fractures in injuries of the leg, due largely to the subcutaneous location of the tibia and fibula, is noted; and of particular interest is the series of pictures illustrating the methods of treating the more serious cases, and x-ray photographs showing successful results. The use of the Kirchner wire for traction in fractures of the leg is well illustrated.

Chapters on "Fractures of the Skull and Brain Trauma" by Dr. Chas. E. Dowman, Atlanta, Georgia, and "Fractures of the Jaws and Related Bones of the Face" by Dr. J. B. Brown, St. Louis, Missouri; and Chapters XIII, XXI, XXII, XXIII, dealing with injuries of the spine, fractures and dislocations of the pelvis, injuries in the region of the hip, and fractures of the shaft of the femur, are splendid surgical monographs. Each one is a real contribution to the literature of the subject of which it treats.

Dr. Dowman's chapter on head injuries is written, as the author points out, "In a manner which will be most helpful to the general practitioner of medicine rather than to those who specialize in surgery of the nervous system." With this in view, he has written a chapter which contains all those things which are important in the diagnosis and

treatment of the cases which are observed in general practice.

Dr. Brown's chapter on fractures of the jaws and related bones of the face is an admirable presentation of this complex subject. The details of diagnosis and treatment as set forth in the text are further impressed and explained by twenty-five illustrations.

Fractures of the spine and pelvis are classified according to location and severity, and with special reference to complicating injuries.

Special attention is given to the care of cases with paralysis from cord injury, and to those cases of fractured pelvis in which there is laceration of the bladder, rectum or urethra.

Of great interest is the question of compression fracture of the vertebral bodies, a condition long unrecognized and still often overlooked. In Conwell's large series, fractures of this type composed more than 50% of all vertebral fractures. Treatment by hyperextension on the Rogers' frame, or on Conwell's modification of the Herzmark-Bradform frame, is described and well illustrated.

On pages 755-756 will be found illustrations and description of the overhead pelvic suspension frame with muslin hammock and wooden spreader, which is of great advantage in the treatment of extensive and serious fractures of the pelvis.

Since many fractures of the pelvis are impossible of reduction it is encouraging to note that good functional results may often be obtained in the absence of anatomical realignment of fractured bone. A remarkable case is shown on page 763.

Two hundred and eighteen pages are given to chapters on injuries in the region of the hip, fractures of the shaft of the femur, and injuries in the region of the knee. Symptomatology, diagnosis's, pathology, and treatment are exhaustively discussed. Methods which are endorsed and recommended are those which have proven most successful in treating the large amount of clinical material which has been at the disposal of the authors.

Among the interesting pathological conditions which are discussed may be mentioned, non-union and delayed union; Sudeck's acute traumatic bone atrophy, pathological fractures, Kummell's disease (late collapse of fractured vertebral bodies), and Osgood-Schlatter's disease (partial avulsion of the tibial tubercle).

The book will prove of inestimable value to every surgeon who undertakes to treat fractures, and should be available to the members of the staff of all hospitals which receive such cases. J. M. M.

The Practical Medicine Series of Year Books: Neurology and Psychiatry: Neurology, edited by Peter Bassoe, M. D., Clinical Professor of Nervous and Mental Diseases, Rush Medical College of the University of Chicago. Psychiatry, edited by Franklin G. Ebaugh, M. D., Professor of Psychiatry, University of Colorado. About 450 pages. Chicago. The Year Book Publishers, Inc., 1934. Price \$2.25 net.

Whatever ill effects the financial depression may have had, it has not reduced either the volume or quality of neurologic literature. In every portion of the field, progress is to be recorded. Occupying greatest attention of investigators has been the numerous significant observations which have

brought us closer to the solution of the mystery of the Argyll Robertson pupil. The painstaking mopping of dermachromes by Foerster shows how a surgeon in his daily work can do important research in human physiology when he has the training. Continued lack of agreement is recorded on the treatment of head injuries in respect to use of lumbar puncture, hypertonic solutions and indications for operation. Fever therapy shares the field of disagreement. The results of investigations concerning the epidemic of encephalitis constituted the event of the year. Sympathectomy has pervaded new fields. Of particular interest is the beautiful work on endocrine glands which are related to nervous conditions.

J. H. W.

The Essentials of Physical Diagnosis: By Robert W. Buck, M. D., Assistant Professor of Preventive Medicine and Instructor in Physical Diagnosis, Tufts College Medical School; Physician to Boston Dispensary. 259 pages with 21 illustrations. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$3.00 net.

Most text-books on physical diagnosis deal primarily with diseases of the heart and lungs. Buck's little manual devotes a proportionate share of its space to diseases of the head, abdomen and the extremities, as well as the chest. Intended primarily for the use of students, this volume is brief and concise, yet the author seems to have been able to condense much valuable material in a minimum of space. While no attempt has been made to enter the field of differential diagnosis, the author has included, with his description of each clinical finding, a brief discussion of its diagnostic significance. For the benefit of those who desire more detailed information the author has appended references to larger volumes in the footnotes. Though primarily intended for students this book should prove a valuable guide to physical diagnosis as performed in the office of internists and general practitioners.

C. K. W.

Modern Clinical Syphilology: (Second Edition) By John H. Stokes, M. D., Duhring Professor of Dermatology and Syphilology, University of Pennsylvania; Member, Commission on Syphilis and Cognate Diseases, League of Nations Health Organization. Second Edition, Revised and Entirely Reset. 1400 pages with 973 illustrations and Text Figures. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$12.00 net.

Because of its great incidence and its tendency to mimic almost any other disease condition, syphilis takes first rank among the diseases which a physician is called upon to treat. Because of the very nature of the disease—its tendency to relapse, its period of latency during which few physical signs or symptoms may point to its presence and the tendency on the part of the medical profession to rely almost exclusively on the Wassermann reaction as a guide to treatment, there has been a tendency to undertreat this disease and to interpret the clearing up of symptoms or the disappearance of an infectious lesion as evidence of cure. The importance of syphilis as a public health problem necessitates the utmost care in the treatment of the disease.

The comparison of the various serological tests for syphilis made by the League of Nations Committee, the work of the Cooperative Clinical Group and the United States Public Health Service and the American Syphilis Investigation, the study of the records of 75,000 cases of syphilis have revised considerably our attitude toward the disease and

its treatment. Stokes has presented in a single volume, under most rigid scientific censorship, the important aspects of the disease and its treatment. No one should consider himself qualified to treat syphilis until he has familiarized himself with this volume.

C. K. W.

Modern Drug Encyclopedia and Therapeutic Guide, by Jacob Gutman, M. D., Phar. D., F. A. C. P., Consulting Physician, Manhattan General Hospital, New York City; the Riverside, Shore Road, Williamsburg Maternity and Borough Park General Hospitals of Brooklyn; Director Brooklyn Diagnostic Institute. Formerly Professor of Materia Medica, College of Dentistry, University of State of New Jersey; Professor of Clinical Chemistry, Jersey City College of Pharmacy; Instructor of Medicine, New York Post-Graduate Medical School and Hospital; Attending Physician Wyckoff Heights and Unity Hospitals. 1933 pages. 76 Fifth Avenue, New York City. Paul B. Hoeber, Inc., 1934. \$7.50 net.

In such a little volume as the *Epitome of the U. S. Pharmacopeia*, the physician can find the essential information pertaining to the pharmacopeial preparations. His office is daily flooded with literature pertaining to some of the thousands of non-pharmacopeial preparations and "detail men" almost daily quote for him the advantages of their particular preparations. All of this information cannot possibly be kept in a physician's head and the descriptive literature, after a brief glance, generally finds its way into the waste basket. The time soon comes when the physician wishes to know some specific detail about one of these preparations—its dose, the form in which the preparation is administered, the size of the package in which the preparation is sold, the exact composition of the mixture he is about to prescribe, or some specific question as to its pharmacological actions, its indications and its contraindications. Doctor Gutman has performed a service to the medical profession in gathering together in a single volume the essential facts containing the thousands of non-pharmacopeial remedies which are now available. Sections deal with drugs of known constitution, mixtures of drugs which in the author's opinion have some claim to value, preparations whose composition are unknown and undeclared, the various endocrine preparations both individual and mixed, hypodermic medication, vaccines and immune sera, allergens, foods, beverages, mineral waters and a large assortment of miscellaneous products. The therapeutic guide should also prove of practical value.

Any one who wishes to avoid error in the use of the innumerable remedies now available will find this encyclopedia of drugs invaluable. C. K. W.

Corrective Physical Education: By Josephine Langworthy Rathbone, M. A., Instructor in Physical Education, Teachers College, Columbia University, New York City. 292 pages with 153 illustrations. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$2.50 net.

This book is a small but practical text intended primarily for students in physical education. In detail and with the aid of simple but very effective diagrams Miss Rathbone has shown not only how to perform the various exercises but has also outlined those exercises which are of value in overcoming various physical handicaps. The need of physical education is equally great in the case of those who are physically handicapped and in those whose defects may be prevented by proper muscle education.

C. K. W.

Truth About Medicines

ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following devices have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

Model "C" Kromayer Lamp.—This lamp is designed especially for irradiation of various body cavities. Several sizes and shapes of burners are available. One unit was investigated in a clinic and physical laboratory acceptable to the Council and was found to be in agreement with the manufacturer's claims. The Hanovia Chemical and Manufacturing Co., Newark, N. J. (Jour. A. M. A., June 2, 1934, p. 1850.)

Hi-Arc Carbon Arc Lamp.—An ultraviolet generator designed for therapeutic purposes. It is a carbon arc lamp and the arc burns within a closely confined refractory chamber open only in front. Radiant energy is emitted through this oval opening. The electric arc, therefore, takes place with a relatively chemical inert atmosphere, sealed from the air by emerging gases formed when the materials in the carbons vaporize. Liebel-Flarsheim Co., Cincinnati.

Linde Oxygen Therapy Regulator Type R-51.—This is a diaphragm reducing valve, of the two stage or double reduction type. It is recommended for use with nasal catheters, nasal inhalers and face masks, oxygen tents and oxygen chambers. Linde Air Products Co., New York, N. Y. (Jour. A. M. A., June 9, 1934, p. 1941.)

Victor Model "B" Thermo-Spectral Lamp.—A therapeutic radiant heat lamp furnished with two types of radiant energy generators—a nitrogen-filled tungsten filament bulb and a resistance (infra-red) unit. The socket in the chromium plated reflector is standard and the resistance unit can be exchanged for the bulb or vice versa in accordance with technic employed by the physician. The stand is equipped with a flexible extension arm, which may be bent at any angle and retain the position given it. General Electric X-Ray Corporation, Chicago.

Hanovia Group Irradiation Lamp.—The following four models are offered for sale: No. 2135—A four-burner unit for alternating current (60 or 25 cycles); No. 2133—A two-burner unit for alternating current (60 or 25 cycles); No. 2134—A four-burner unit for direct current, 220 volts; No. 2132—A two-burner unit for direct current, 220 volts. The burner consists of an evacuated tubular vessel constructed of transparent fused quartz containing mercury pools, which function as electrodes and supply mercury vapor for arc operation. The group irradiation unit itself is ordinarily mounted in the ceiling; hence a remote-controlled lighting arrangement is required. Hanovia Chemical and Manufacturing Co., Newark, N. J. (Jour. A. M. A., June 16, 1934, p. 2023.)

Victor Diathermy Apparatus.—The following apparatus are designed to generate high frequency electrical currents for therapeutic purposes: V2857. Vario-Frequency Diathermy Outfit, with Auto-Condensation Coil and Meter, arranged for operation on 115 volt, 60 cycle alternating current; V2858. Same as foregoing but for operation on 230 volt; V2855. Vario-Frequency Diathermy Outfit without Auto-Condensation Coil, arranged for operation on 115 volt, 60 cycle alternating current; V2856. Same as foregoing but for operation on 230 volts (also obtainable for 25-49 cycles). The operator of these devices can vary within limits the frequency of the diathermy current generated. The machines are regarded as satisfactory generators of high frequency electric current for use in electrosurgery and the practice of physical therapy. General Electric X-Ray Corp., Chicago. (Jour. A. M. A., June 23, 1934, p. 2102.)

PROPAGANDA FOR REFORM

Vitamin Claims in Food Advertising.—The Committee on Foods reports that vitamin claims shall stipulate the specific vitamin or vitamins present. Vitamins present in a food in insufficient quantity to contribute in any significant manner to the respective vitamin values of the diet do not warrant mention. Statements of vitamin unitage in numerical quantities per gram (and per ounce if desired), where established, are to be encouraged on container labels and advertising, and the type of unit

should be specified. These statements shall be so expressed as not to be misleading. (Jour. A. M. A., June 2, 1934, p. 1850.)

The Estimation of Vitamin C.—Recently two incidents have added to the knowledge of vitamin C. Foremost is the discovery of the chemical nature of this organic food accessory. It is clearly recognized as one of the hexuronic acids, designated as ascorbic acid—a compound that can be prepared synthetically in the laboratory. The other contribution is the development of an indirect chemical method for the estimation of ascorbic acid in foods and tissues. This promises to enable investigators to dispense with the time-consuming biologic method of assay that has been in vogue for more than a decade. The product is already commercially available. According to comparative investigations, 2 mg. of ascorbic acid is equivalent in antiscorbutic potency to 3 cc. of orange juice. With the new methods of assay it has become possible to estimate the distribution of the indispensable ascorbic acid in the body. It is already known that the substance is quite widespread in various tissues and organs, in which the content is decreased whenever there is a shortage of vitamin C in the dietary intake. According to observations by Harris, Ray and Ward of the Nutritional Laboratory in Cambridge, England, it may become possible, by examination of the urine, to ascertain whether the supply of vitamin C falls below a safe margin, so that a diagnosis of latent avitaminosis can be made before other symptoms are present. (Jour. A. M. A., June 2, 1934, p. 1852.)

Pharmacopeial Vitamin Standardization.—The first of the interim revisions issued by the Committee of Revision of the U. S. Pharmacopeia has just been promulgated and deals with the methods and potencies of vitamin assay for cod liver oil. The new standards become official Jan. 1, 1935. In conformity with the progress for international standards, the new standards for the Pharmacopeia employ international units. These units are based on comparisons of the vitamin A and vitamin D activity of the oil to be assayed with a known reference oil. Using this method, the Committee of Revision has issued an order that all cod liver oil, labeled as such, which is sold in the

United States shall have as minimum standards for vitamin A not less than 600 international units and for vitamin D not less than 85 international units per gram. This is approximately equal to 430 A. D. M. A. units or U. S. P. X. units of vitamin A per gram or 32 Steenbock units of vitamin D per gram. It will thus be seen that cod liver oil in order to pass these minimum potencies must be of high grade. Until the new U. S. P. standards are thoroughly established, however, those who wish to avoid products of doubtful potency should confine their prescriptions to the brands that have been found acceptable by the Council on Pharmacy and Chemistry. The new U. S. P. standards do not cover products that have been fortified by the addition of viosterol or have been modified in such a way as to be sold as concentrates either in liquid or in tablet form. Calculated strictly under the new standards, one teaspoonful of cod liver oil gives approximately 310 vitamin D units and 2,200 vitamin A units (revised 1934 units), an increase in dose of vitamin A of approximately 40 per cent and vitamin D of approximately 240 per cent as compared with the hitherto accepted dosage. (Jour. A. M. A., June 2, 1934, p. 1854.)

Infiltration Anesthesia.—In a recent review published by the Council on Dental Therapeutics of the American Dental Association it was brought out that there have been and are a multitude of solutions for local or infiltration anesthesia on the market. These are of such variation in reaction (pH), nature of preservative, and so on, as to render impossible any determinations of the cause of unsatisfactory results or reactions, whether due to the product, to the method employed or to idiosyncrasy of the patient. In recent years, except for sporadic or regional though evanescent popularity of other compounds, procaine hydrochloride, either alone or with epinephrine, has come into almost universal use. The article in the Journal of the American Dental Association concludes: "In summary it may be said that recent experiences point to the desirability of using freshly prepared alkaline solutions of procaine hydrochloride, and epinephrine for local anesthesia."—Jour. A. M. A., June 9, 1934, p. 1942.)

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THE PATHOLOGY OF THE ANEMIAS OF EARLY INFANCY*

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The blood is an organ, a true working unit. Like other organs it has its own inherent liability to disease but like them also it reflects disease resident elsewhere. Indeed its intimate contact with all other tissues of the body and its important part in metabolic processes as well as its protective and regulatory functions make it a delicate indicator of disturbance anywhere in the organism. The warning that anemia is a symptom rather than a disease cannot be too often stated.

The pathology of anemia is based upon the factors concerned in the formation, utilization and final destruction of red blood cells. As to their formation, Sabin and her co-workers first demonstrated unequivocally the direct descent of the erythrocyte from the endothelial cell lining the blood spaces of the bone marrow as distinct from the formation of the white cells from the reticular tissue outside those spaces. In the resting marrow of the adult but few of the intra- or extracapillary brood pens are active and the marrow looks like a mere fat mass. In infancy it is pink and soft because formative activity is at a relatively high level. When unusual demands require increased numbers of cells, the formative centers expand and the marrow becomes red and semi-solid. This is "hyperplasia". When the marrow function is depressed as in "hypoplasia" the formative centers shrink while in "aplasia" there is complete

disappearance of any evidence of new cell formation. The platelets arise from extravascular giant cells or megakaryocytes which extend cytoplasmic processes through the endothelial walls of the vessels and bud off the tiny platelet masses into the blood stream.

The red cell begins its life as a megaloblast, a large cell with dense nucleus and basic staining cytoplasm. Through mitosis it surrounds itself with a family of daughter cells much like it in appearance but of smaller size. These are the normoblasts, cells little if any larger than the erythrocyte. As development proceeds hemoglobin accumulates in the cytoplasm and the original blue of the cell body changes, as seen under the usual stains, through bronze or green to red, while at the same time the nucleus breaks up, disappears and the final non-nucleated red cell is ready to go to work. In the early stages of formation, the cells adhere to form a compact mass but, as they mature, blood plasma seeps between them, gradually distends the lumen of the capillary and finally opens it into a sinus. The whole batch of freshly minted cells is thus discharged into the blood stream. Premature discharge occasioned by extra demands results in the "showers" of immature cells sometimes seen in the circulation. Over-demand results first in the appearance of red cells still showing traces of the original basic staining cytoplasm (basophilic or polychromatophilic cells). Following them are cells which, when stained by a special method before they have been allowed to dry upon the slide, show fine dots or filaments of the old basic staining material whence they are called "reticulocytes". They are present in normal blood in numbers equal to about 0.5% of all the red cells but increase rapidly to 10, 20 or even higher

*Part 1 of a symposium on the subject, presented to the Association in annual session, Birmingham, April 17, 1934.

percentages when cell formation is unusually active. Further upset of the normal balance results in the appearance of normoblasts and finally of the last line of marrow reserves, the megaloblasts. The nucleated early cells are poorly supplied with hemoglobin and in the circulation are like children attempting the work of men. The laws governing the output of the white cells are probably similar to those here suggested but are usually activated by different stimuli. Those applying to the platelets are still vague.

The nutritive factors that are believed to influence the developmental cycle of the red cells will be discussed by the second essayist and need not concern us here.

The red cell probably has a working life of about thirty days. It has been suggested that at the end of this time it has become mechanically worn out or broken to pieces. Its remnants are probably dissolved by cells of the reticulo-endothelial system. The spleen appears to assume a large share of this work, a fact that explains its ready enlargement in diseases characterized by marked blood destruction. When the erythrocyte is destroyed, its iron core is retained within the body and returned to the formative centers to be recast into new cells. Thus the body attempts to hoard a basic supply of iron but there is a small wear-and-tear loss that needs constant replacement. It has been estimated that such replacement iron amounts for the infant to something like 2 mgms. (1/30th grain) daily. The principal difficulty in assuring its supply to the anemic patient lies in the problem of securing its actual utilization by the patient's own tissues.

The organic pigment residue of red cell destruction, apparently identical with bilirubin, enters the blood stream, is carried to the liver and secreted through the bile into the intestine. From the intestine it is in part taken up as building material for new red cells but a part of it is excreted in the feces. The measurement of the bilirubin derivatives contained in the feces, offers therefore one means of measuring the rate of red cell destruction. Likewise, when the liver is unable to handle the products of an unusually active blood destruction, pigment residue accumulates in the blood stream

and produces jaundice. The van den Bergh reaction demonstrates this bilirubin equivalent and measures its amount. More simply, the color of the serum can be compared directly with that of a standard solution of potassium bichromate and the reaction expressed as the icteric index. By either method, the values obtained give a roughly quantitative measurement of the amount of blood destruction that is going on. A residue of intestinal bilirubin is excreted through the kidneys as urobilinogen or urobilin. This also is valuable as an indicator of active cell destruction. It is not to be confused with the bilirubin or true bile pigment that may result from obstructive jaundice. When blood destruction is unusually active, as in hemolytic icterus, or the formative cells are unable to utilize even a normal turn-over of building material, as in pernicious anemia, an iron-containing residue, hemosiderin, is deposited in the tissues as glistening pigment granules. Such waste heaps of scrap-iron are often highly informing to the tissue pathologist.

More and more attention has been given of late years to the general biological characters of the blood in anemia. Many of the methods for studying these characters are too involved for clinical application and as yet of little or no practical value. There has been, however, an increasing use of certain easily applied methods of measurement designed to show more accurately than the routine blood count such red cell qualities as relative concentration in the plasma, average size or volume, and the individual hemoglobin content. An early sign of the reaction to disease is a variation in the size of the individual cells and a total variation of all the cells above or below the normal. The average size of the cells is calculated from two determinations. A red cell count is made and the number found is stated as a percentage of the normal five million: then a known volume of the blood is centrifuged to determine the total volume of the entire red cell mass contained in it. This figure expressed as a percentage of the normal volume is divided by the number percentage obtained from the direct count. The quotient is stated as the volume index. Knowing the volume index, and the total hemoglobin content of a given blood it is easy to

calculate also the amount of hemoglobin held in the average cell, that is, the saturation index. Individual variations in the red cell size are sometimes determined by actual measurement of large numbers of cells, the results being plotted in a graph known as the Price-Jones curve.

The use of these values has set up a new angle of observation and introduced a new terminology. Thus the group of diseases headed by pernicious anemia, whose striking characteristic is the average large size of the red cell, is known more and more as macrocytic anemia, the old term "primary" going deservedly into the discard. In some of the anemias the red cells, while decreased in number, are still of normal average size and we speak of a normocytic anemia. An example is the anemia immediately evident after a large hemorrhage. The commonest variation is a decrease in the average cell size greater even than the total decrease in numbers so that most anemic patients seen in routine practice will represent examples of small cell or microcytic anemia. When the relative amount of hemoglobin per cell is decreased we may speak of a hypochromic anemia. Such terms aim at greater precision of classification and understanding. They are to be preferred to the older designations "primary" and "secondary" anemia.

One fact must be emphasized as bearing upon the study of the anemias of infancy. The infant's blood, like its other organs, is highly unstable. Its checks and balances may be upset to exaggerated degree by irritants harmless to older individuals. In the newborn, the sudden transference from the relative anoxemia and predigested food supply of intrauterine life to the individual adjustments made necessary by the demands of independent metabolism create a difficult situation. Rapid alterations must occur in all the organs. It is not uncommon for the pathologist to find himself in the embarrassing position of being unable to demonstrate organic change sufficient to explain death in early infancy. In such cases, the writer has been tempted to go beyond the list of recognized causes of death and ascribe the fatality to a failure of physiological adjustment somewhere in the organism. During the intrauterine period,

the red count and hemoglobin values are high and many nucleated red cells are circulating. There is a definite macrocytosis. Blood formative centers are present in the liver, spleen, kidney and other organs. A rich reserve store of blood building material is accumulated in the body. Despite recent claim to the contrary, it is widely believed that this storage goes on most rapidly during the final months of pregnancy. Perhaps the only reason that the gestation period should be extended to nine, instead of seven or eight months, is the desire of nature to provide a final period of tuning up or integration of bodily functions. During the first few days after birth the percentage of reticulocytes drops off sharply from an original level higher than that of the adult. The indicated lessening of new cell formation is accompanied by the disappearance of the nucleated red cells usually present at birth. There seems to be no immediate formation of new building material. The rapid destruction evident must itself contribute to the available supplies; yet, all this, plus the reserve store, seems unable to meet the demand and there develops an anemia so regular in its appearance as to be considered physiological. The period of greatest depression in blood values lies somewhere in the second and third months, after which there is a fluctuating recovery which does not, however, reach stability till the end of the second year.

These introductory remarks have been lengthy but they seemed appropriate to the present discussion since the principles touched upon must be constantly in mind when explanation is sought for the widely varying pictures seen in the different forms of anemia. The problems presented are so complex that no entirely satisfactory classification of these anemias is possible in the present state of our knowledge. This is particularly so in the case of the anemias of infancy. We can, however, discern a fairly sharp line of cleavage between two great types. In one the red cells are destroyed more rapidly than they can be replaced; in the other the formation of new cells is inadequate in individual composition, in number, or in both, so that replacement of the normal wear and tear cannot take place.

The first type has been called hemolytic or hemoclastic anemia. In its pure form it has well defined characteristics. The excessive destruction of erythrocytes results in a release into the body fluids of an increased amount of pigment residue. The blood becomes heavily tinged, there is a high icteric index and strongly developed indirect van den Bergh reaction. Deposit of the pigment in the skin, or even its presence in the surface capillaries, produces jaundice. The stools are dark colored and urobilin appears in the urine, perhaps even unaltered hemoglobin. The bone marrow speeds up in the effort to maintain a competent hemoglobin content in the blood and its hyperplasia is evidenced by the appearance in the blood of normoblasts, or even megaloblasts, many reticulocytes, basophilic and stippled red cells. Associated disturbance of the white cell precursors often results in leukocytosis and the appearance of myelocytes or even myeloblasts. Splenomegaly is present. Islands of blood forming cells appear in the viscera, especially in the liver and spleen. The unusual turnover of iron results in hemosiderin deposit throughout the tissues but particularly in the reticulo-endothelial apparatus and in the excretory cells of the kidney.

The prototype of this complex is congenital hemolytic icterus. Allied to it is sickle cell anemia. For the negro, this is a frequent cause of disability. A survey of some 1,500 unselected patients in the negro wards of the Hillman Hospital in this city demonstrated the presence of the underlying red cell anomaly or meniscocytosis in over 7%. Meniscocytosis may exist without the appearance of anemia but occasionally anemia may become profound and the disease may prove fatal in infancy, childhood or early adult life.

In both hemolytic jaundice and sickle cell anemia the red cells appear to be poorly constructed so that they are unusually susceptible to injury. It is probable that there is some additional factor or factors to disturb the normal balance between the rates of red cell production and destruction. The almost invariable racial restriction of sickle cell anemia is paralleled in the opinion of Cooley by the occurrence of an allied condition in the Mediterranean peoples. To this condition he applies the term "erythroblas-

tosis". At least some of the cases of the so-called von Jaksch's anemia also belong here. Cooley has stated more recently that erythroblastosis and congenital hemolytic icterus are probably identical. In all these anemias there are remissions and exacerbations in the rate of blood destruction producing corresponding variations in subjective and objective findings. Contrary to what would be expected from the obviously soft and deformable cells of sickle cell anemia, the fragility is decreased. Increased fragility is one of the best indications of congenital hemolytic icterus but is not constant as was proved in a recent case. Splenomegaly is common to all the group although the early enlargement in sickle cell anemia gives way later to excessive scarring and shrinkage.

The salient pathology of the group may best be illustrated by citing the findings in a particular case. It was that of an Italian baby 2½ months old who died of congenital hemolytic icterus. The red count was 2,100,000, hemoglobin 30%, color index 0.7. One hundred eleven (111) normoblasts were seen in differentiating 300 leucocytes. The leucocyte count was 83,000 and there were 11.7% myeloblasts and 21% myelocytes in the blood. Indirect van den Bergh reaction was strongly positive and 65 mgms. of bilirubin were present per liter of serum. The fragility of the red cells was increased, hemolysis beginning at 0.6% NaCl, and being complete at 0.38%. The mother also had a high bilirubin content of the blood serum (20.2% mgms. per liter). Her fragility test showed beginning hemolysis at 0.48% and complete at 0.40%. Autopsy revealed a dark red hyperplastic bone marrow stuffed with actively proliferating cells of both the red and white series. The spleen weighed 120 gms. Its sinuses were engorged but as in all cases of the disease there was little else to be made out. One wonders at the exact mechanism by which the red cells are being destroyed here. In the kidney there is extensive deposit of iron-containing pigment in the tubular epithelium. Many casts are present within the tubules, all more or less completely saturated with blood pigment.

The possible relationship of icterus gravis neonatorum to this group is uncertain. Some cases so designated are undoubtedly

due to congenital atresia of the bile ducts. Exaggeration of the physiological hemolysis of early adjustment might conceivably result in extreme or even fatal blood destruction. Finally, cases so designated may represent examples of congenital hemolytic icterus or of sickle cell anemia.

Mention should be made of the acute hemolytic anemia of Lederer. It is seen in infants as well as older children and adults. Characterized by an acute onset, jaundice, possibly hemoglobinuria, fever, gastro-intestinal disturbances and prostration, it shows a remarkably rapid fall in hemoglobin percentage and red cell count. The blood picture is said to resemble somewhat that of acute leukemia. The disease tends to be self-limited but transfusion promotes rapid improvement. This anemia is uncommon but is cited because of its unusual manifestations and the question that it raises as to whether there may occur in subjects previously healthy a sudden breakdown in the mechanism of blood formation or in the balance between production and destruction, comparable to that of congenital or acquired hemolytic icterus. Such seems more probable than the suggested theory of infection. There is a suspicion that something of the same kind may happen to platelet formation or regulation preceding the hemorrhagic seizures of thrombocytopenic purpura.

The second great type of anemia results from some interference with the normal course of red cell development. It has been suggested with some plausibility that the failure may sometimes be due to constitutional inferiority of the blood forming tissues. Analogy might be drawn to the circulatory failure resulting from congenital malformation of the heart. But there is sufficient direct evidence to support the belief that these anemias usually depend either upon a failure of nutrition in its broadest sense, or upon infection or upon combinations of the two. Hemolytic features may be present but appear to be of secondary importance. The anemia of the little understood hemorrhagic disease of the newborn need not concern us. Hemophilia and purpura may also be excluded. Mere mention may be made of the rare cases of bony maldevelopment or osteoscle-

rosis. Here the marrow space is filled with dense osteogenic tissue so that the blood forming tissue is mechanically excluded and anemia is inevitable.

Usage appears to differentiate from the general group of nutritional anemias a deficiency anemia due specifically to a lack of iron but for our present purposes we may well include here any anemia referable to metabolic disturbance. These anemias are variously designated by the clinician according as the family history, age of onset, duration of gestation or other clinical facts seem more or less important. It is within this group that most advance has been made of recent years, especially along the line of etiology. Much painstaking clinical study has been applied to it and animal experimentation has added greatly to our knowledge.

Obviously the pathology of these anemias should concern itself first with the physiological or chemical processes directly concerned in the metabolism of the blood. But our methods are inadequate and there is in addition the fact that it is difficult to obtain material for study from these tiny patients. There is, for example, strong suspicion that gastro-intestinal abnormality, inherent or secondary, may play a large part in the failure of the blood-forming tissue. Occasionally we may demonstrate atresia or other gross abnormality here but for the most part nothing is found when the organs are examined. Even under the microscope the fundamental changes may escape detection. From such data as are available it appears that the marrow may show a widely varying range from hyperplasia to aplasia. Ordinarily, as would be expected, the severe types of anemia show evident failure of the maturational processes. Erythropoietic cells are reduced in numbers and there is usually a marked decrease in the megaloblasts or almost complete disappearance of these important stem cells. Normoblasts are apt to be little in evidence so that the whole picture may approach that of aplastic anemia and the patient may die of apparent bone marrow failure. The blood picture is usually of the chlorotic type, the reduction in hemoglobin exceeding that in the number of the red cells. The color index is of the order of 0.6 to 0.4 so that a red

count of four million may be accompanied by a hemoglobin of only 30 to 40%. The red cells are microcytic in type. They may show little or much variation in size and shape. Rarely is there any appearance of nucleated red cells, stippling or polychromatophilia. The white cells and platelets may be normal or decreased in number.

There is probably more or less of a nutritional factor in the anemias due to infection but in addition there is the likelihood of some direct action of bacterial or protozoan toxins upon the formative cells of the marrow. Such direct action may be on the one hand stimulative, or again it may be depressant. The blood picture, as might be expected, varies in wide limits. Unstable at best, it responds even to slight infection by discharging into the blood stream cells abnormal in number or in type or in both. Thus nucleated and polychromatophilic stippled cells are commonly seen but the absence of reticulocytes bears evidence to the suppression of new cell formation. The leukocytosis of infection passes readily into phases characterized by the presence of few or many myelocytes or even myeloblasts. The blood picture may become so unusual as to suggest leukemia. In the presence of the enlarged spleen commonly found it may be set down to von Jaksch's anemia or other unusual disease. On the other hand, there may be more or less marked leukopenia, the failure of granulocytes suggesting even agranulocytosis of adult life. Increased hemolysis may complicate the picture already filled with many variables.

The causative infection may be apparent or hidden and its activity temporary or long drawn out. As an example of chronic infection, there is none better than syphilis. It may produce a variety of blood pictures grading from marked anemias of the aplastic type to leukemoid reactions. In the recent case of a two weeks old infant the profound anemia was accompanied by such large numbers of nucleated red cells as to suggest the diagnosis of erythroblastosis. Attempted cross matching of the blood preparatory to transfusion revealed the presence of auto-agglutinins, the blood serum agglutinating its own corpuscles as well as those of other individuals of the same group.

It is a curious fact that the evident bone marrow failure of these anemias is often accompanied by the appearance of islands of blood-forming cells in the viscera, especially in the liver and spleen. This reversion to or persistence of the fetal type of blood formation is difficult to understand except on the supposition that in these extra-medullary locations the formative cells are able to obtain from the parenchyma nutritive material that fails to reach them through the blood while they are located in the bone cavities.

To summarize: The blood is a highly complex organ. It has a complicated internal and external metabolism but is remarkably constant in its make-up during health. It is quickly responsive to changes in its bodily environment. Easily accessible to study, it becomes a valuable indicator of disease either within or without its own organ system. It responds quickly and sometimes alarmingly to insufficiencies of the nutritive elements needed for its proper development and maintenance and to infectious or toxic influences of varied type. It has its own inherent diseases but its derangements rest more commonly upon external than upon internal disturbances. The intensive study of recent years has added greatly to our understanding, but much remains to be done before the story is completed.

Cardiac Disorders in Surgical Patients—The presence of valvular defects seems to add little to the seriousness of the evaluation of the surgical risk. This is especially true for rheumatic aortic valvulitis and mitral stenosis. Syphilitic aortic insufficiency and aortitis cannot, however, be accorded such a tolerant attitude for the erratic unpredictable behavior is well known. The degree of involvement of the coronary orifices is very difficult to determine. The occurrence of pain adds to the gravity of the risk. Arterio-sclerotic valvulitis in the anterior mitral valve is of little significance, but a calcareous disease of the aorta, with the possibility of coronary involvement, commands respect in prognosticating surgical risks. Anginal failure, cardiac pain, angina pectoris or coronary thrombosis patients may be subject to surgical treatment if carefully prepared preoperatively but always the risk is considerable. Congestive failure or decomposition, likewise, adds greatly to the risk and should be relieved by adequate therapy before any except the most urgent operations be undertaken.—*Herrmann and Herrmann, Texas State J. Med., July '34.*

THE ETIOLOGY AND SYMPTOMATOLOGY OF THE ANEMIAS OF EARLY INFANCY*

By

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Since a proper blood supply is so necessary for correct functioning of the human organism, the anemias should always be of vital interest. Strictly speaking, anemia should mean a diminution in either the hemoglobin or the red blood cells or both. However, in the modern literature, it is customary to consider the word anemia as referring to a lowered hemoglobin content of the blood. Lucas and Fleischner state that "anemia may be defined as a condition in which the hemoglobin, so valuable for carrying sufficient oxygen for the needs of the body, is diminished."

Certain nutritional elements or building stones are necessary to the proper development of red cells with their normal hemoglobin content. The importance of iron has been known for many years. Recently, it has been shown that copper is also important. Since it probably acts merely as a catalyst in iron metabolism, a little goes a long way. Manganese may be of importance but again mere traces suffice. One of the greatest triumphs of recent medicine has been the demonstration of the anti-anemic or hematinic factor in liver and the further proof that this something is built up originally through the activity of a rennin-like enzyme presumably secreted by the gastric mucosa, Castle's "intrinsic factor". This intrinsic factor acting upon food protein or "extrinsic factor" elaborates a substance essential to the earlier phases of red cell development. It has been suspected that this mysterious element may be vitamin B₂ or a closely related substance. In its absence blood formation appears to stop at the megaloblast stage. Thus, in pernicious anemia, megaloblasts appear in the circulating blood and the bone marrow is so stuffed with them as to have been likened to tumor. Iron and copper are probably concerned more with the final phases of ery-

throcyte development, i. e., the conversion of the normoblast into the mature erythrocyte. It is probable that vitamin C is important here also and the anemia of cretinism suggests that thyroxine is likewise essential. Other dietary elements that have been suspected as directly concerned are the amino-acids and also yeast fractions that may or may not be identical with the substances already mentioned.

One of the most illuminating experiments was that reported by Parsons. He produced anemia in rats by placing them upon a milk diet. The anemia was cured by adding iron and copper to the milk but the animals did not reproduce. When yeast was added to the milk, he found not only that the anemia was cured but that the animals reproduced normally. Then, however, an interesting fact developed. The progeny of these animals proved to be small and markedly anemic. Hemoglobin values were seen as low as 15% and the spleen was markedly enlarged. In one animal the hemoglobin was 12%, the color index 0.2, the white count 16,000. There was marked irregularity in the size and shape of the red cells and nucleated red cells were present in the circulating blood. Here then is an experimentally induced anemia similar to the congenital anemias encountered in the human and dependent for its production, not on any inherent defect in the offspring but on a dietary insufficiency deriving from a mother who was herself lacking in some essential factor though showing no obvious signs of malnutrition or anemia.

Following birth, according to Sanford, the high hemoglobin normally rapidly falls to about 65% at the end of the second month. It then begins to rise. He goes so far as to say that he does not think a baby should be considered anemic unless the hemoglobin is 50% or less. I believe that these figures are too low. Helen Mackay has made extensive studies on the hemoglobin variations during the first year. Using the Price-Jones-Haldane hemoglobinometer, she decided that the hemoglobin may normally go down to 74% at the end of the third month. The average bottle fed baby went to 69%. Thus, it is seen that there is no unanimity as to when a baby is or is not anemic, or we might say pathologically ane-

*Part 2 of a symposium on the subject, presented to the Association in annual session, Birmingham, April 17, 1934.

mic, since the above diminution has been referred to as a physiological anemia.

When speaking of anemia, pallor is usually our first thought. However, this is a very unreliable criterion. Parsons states that the hemoglobin must be in the neighborhood of 60% before anemia can be detected by inspection. On the other hand, it is not unusual to find that a pale child has a normal hemoglobin. There is merely a constriction of the superficial vessels with a consequent small amount of blood in the skin. This seems to be a common occurrence in certain families. The color of the mucous membrane is usually more reliable than that of the skin. It should be remembered that a dehydrated baby might have a normal hemoglobin and red cell count in spite of being actually anemic. Anemic babies are listless and irritable. The appetite is poor and there may be an accompanying constipation. The heart rate may be increased and a systolic murmur at the base is not uncommon.

Dr. Graham has given you the classification of the various anemias. In this paper it will be impossible to discuss in detail each of these anemias as found in early infancy. Anemia due to the direct loss of blood is not limited to early infancy. The same is true of the anemias associated with chronic respiratory infections, tuberculosis, syphilis and rickets. While these anemias are important, I am going to limit the discussion in this paper to anemia of the new-born, familial icterus gravis or erythroblastosis, the anemia of prematurity and the nutritional anemias.

ANEMIA OF THE NEW-BORN

While Happ does not consider anemia of the new-born as a specific disease, Arthur Abt states that it is a rare but definite disease entity. It is also called congenital anemia. The outstanding feature of this anemia is the dramatic suddenness of its onset. Following an uneventful delivery, the baby appears normal in every respect. The prenatal history presents nothing unusual and the parents are in good health. The baby has good color and begins to nurse well. On the fourth to seventh day of life, a marked pallor is suddenly noticed. Although some of these babies are fretful and irritable, the

usual picture is that they nurse and sleep well. The cry is vigorous. There is no fever. In other words, the extreme pallor is the chief symptom. Segar and Stoeffler reported this disease in three successive pregnancies. The one case that they reported in detail gained weight quite well until the anemia became very severe. The blood picture shows a low hemoglobin, low red blood cell count with a color index slightly under 1.0, marked aniso- and poikilocytosis and polychromasia. There is no constant change in the leucocytes. Immature blood cells are not present to any great degree. The spleen is rarely enlarged early in the disease.

Etiology: This anemia is difficult to classify. There is no evidence of excessive hemolysis so the disease cannot be classified with the hemolytic group. The consensus of opinion seems to be that there is an essential weakness of the hematopoietic system. Salomonsen has pointed out that, after birth, there is an increased available supply of oxygen. Since this removes the need for the fetal polycythemia, there is a slowing up of the formation of red cells and hemoglobin. He feels that this normal diminution merely progresses to a pathological degree. The experiment of Parsons with the rats and yeast suggests a possible cause for the deficiency in the hematopoietic system. Arthur Abt seems to size up the situation correctly when he states that "until the exact mechanism of the normal adaptation of the blood-forming and blood-destroying processes in the early period is known, anemia of the new-born cannot adequately be explained."

FAMILIAL ICTERUS GRAVIS OR ERYTHROBLASTOSIS

As mentioned above, there is normally a diminution in the red blood cells and the hemoglobin in the early new-born period. This is due partially to hemolysis. This hemolytic process may be sufficiently great to result in jaundice. In the average case, this is of little consequence and is referred to as a physiologic jaundice or icterus neonatorum. However, in certain cases, the jaundice may become extreme and more persistent. Due to the tendency of these cases to appear in families, the disease has been termed familial icterus gravis. The children appear normal at birth but within a very few hours, a progressive icterus ap-

pears. There is no fever. The stools are not acholic but the urine contains bile pigment. Both the liver and spleen are usually enlarged.

Buhrman and Sanford reported two cases in 1931 of familial jaundice that differed from other reported cases only in that there was an intense erythroblastosis. While nucleated red blood cells are rather common in the new-born period, no attention has been called to such an increase as they reported. They suggest that this might be due to lack of proper blood examinations in the previous cases. In their cases, the nucleated red blood cells were 213,000 and 140,000 respectively. There was an accompanying anemia of severe degree. In one case the color index was 1.5 and in the other it was 0.85. The white blood cells varied in number and there were many immature granular cells. The indirect van den Bergh reaction was positive in both cases.

Etiology: Various theories have been offered as to the etiology of erythroblastosis. Sepsis and toxemia of pregnancy have both had their advocates. However, there was no history of toxemia in the mothers in the above cases and autopsy showed no evidence of sepsis. Abt states that this disease is due to an "embryonal persistence of hematopoiesis of erythrocytes in the various organs". Buhrman and Sanford concur in this opinion. The jaundice is unquestionably caused by hemolysis of the red cells as shown by the anemia, bile pigments in the urine and in the positive indirect van den Bergh reaction. It would seem that the jaundice is due to a continued and extreme hemolysis and that the erythroblastic reaction is the result of the hematopoietic system's response to the severe anemia. Parsons inclines to this opinion. Cooley reports a case which strengthens this view. The jaundice and erythroblastosis were noted soon after birth. During the ensuing five weeks, the baby received seventeen transfusions. A splenectomy was then done. The hemolysis stopped immediately and the jaundice and the nucleated red cells disappeared. It seemed that the baby was cured. Unfortunately, the baby died ten days later due to peritonitis following breaking open of the operative incision.

ANEMIA OF PREMATURITY

The majority of premature infants develop an anemia by the end of the fifth to twelfth week. The more premature the baby, the greater the anemia. The symptoms are the same as those outlined earlier in this paper. The chief differences between this anemia and the nutritional anemias is that the anemia of prematurity appears at an earlier age. There is also a greater tendency to splenic and general lymphoid hypertrophy. In the early stages, the anemia of prematurity is of the hyperchromic type.

Etiology: The etiology of this anemia is a matter of dispute. The probabilities seem to be:

1. Deficient antenatal storage.
2. Adjustment of blood formation at a low level.
3. Greater hemolysis due to the fact that the premature needs less oxygen than the normal active baby. This hypothesis is suggested by the fact that the icteric index returns to normal more slowly than in the full term baby. Also a greater percentage of premature babies develop icterus neonatorum.

Hugounenq feels that he has shown that two-thirds of the iron stored in the liver at birth is placed there during the last three months of normal pregnancy. Since the premature baby misses part of this storage period, his iron supply is low. Most writers have accepted this explanation as the true etiology of the anemia of prematurity. However, Gladstone takes issue with these statements. He states that "there is no evidence microscopically or chemically of large or progressive depositions of iron in the liver during the last four months of intrauterine life". He further states that the largest amounts of iron are found in the liver from one to ten weeks after birth. He believes that this iron deposition is the result of the postnatal hemolysis which liberates much iron. Abt agrees with Gladstone. He feels that the anemia of prematurity is due to the fact that the premature baby grows relatively faster than the full term baby and that therefore the blood volume must increase at a more rapid rate and this in turn calls for a greater supply of iron. He also feels that immaturity of the

blood forming organs may play an important part. The probability of this latter factor is strengthened by the fact that the early administration of iron frequently fails to prevent the development of the anemia of the premature.

NUTRITIONAL ANEMIA

This is the anemia most commonly found in infancy. In 1912, Czerny stated that these anemias were due to milk injury, the fatty acids probably being the culprits. In recent years this view has been discarded. Cooley believes that "deficiency anemia" is a better term than nutritional anemia. He feels that the anemia is due to a defect in the supply to the marrow of the materials necessary for the production of sufficient hemoglobin. The deficiency may lie in a defective diet, poor absorption or some failure in the intermediate metabolism. Iron is the element that is chiefly lacking. This shortage may be due to a deficient ante-natal storage. The mother may be lacking in iron or she may not transfer the usual amount to the fetus. In twin pregnancies, the supply is usually diminished. Even when the fetus obtains the usual amount of iron from the mother, it is utilized by the end of the third to fifth month. Anemia then results unless the postnatal supply is sufficient. This postnatal supply may be insufficient—

1. In the breast fed baby if the mother has a deficiency in iron.
2. In the artificially fed baby since cows' milk contains less iron than does human milk.
3. When milk feeding is continued beyond the normal lactation period.

Helen Mackay states that 40% of breast fed babies and 70% of artificially fed babies develop nutritional anemia. Many of these children develop infections which in turn makes the anemia worse. In fact, some writers feel that all anemias in this class are the result of infectious processes.

Symptomatology: The nutritional anemias rarely appear before the third month. The infants are usually of normal size and fairly well nourished. The most striking thing about them is their pallor. There is no jaundice. The spleen is often palpable

but the lymph glands are of normal size. The appetite is usually poor and the baby is fretful.

The blood picture is of the hypochromic type, the color index in a case of moderate severity being about 0.6. The less severe anemias show a fall in hemoglobin with little if any diminution in the red cells. In the more severe cases a few normoblasts are found. The white cells do not show any constant change.

SUMMARY

Other than the dramatic suddenness of the onset of the pallor in the anemia of the new-born and the enormous number of nucleated red cells in erythroblastosis, the etiology of the anemias in early infancy is much more interesting than is the symptomatology. Blood loss, due either to hemorrhage or hemolysis, and failure of normal blood formation are the two great causes of anemia. In the first group, we do not know just why severe hemolysis occurs in certain infants. The normal hemolytic processes seem to get beyond control. The anemias due to defective blood formation are better understood although the last word has not been said even for this group. While Castle's intrinsic factor, certain proteins, the vitamins and probably thyroxine are important, the chief deficiencies in early infancy are iron and to a slighter degree, copper. This still leaves us without a satisfactory etiology for the anemia of the new-born. Parson's experiments with the rats and yeast may lead the way to the proper solution. Until this end is accomplished, we must agree with Abt when he states "until the exact mechanism of the normal adaptation of the blood-forming and blood-destroying processes in the early period is known, anemia of the new-born cannot adequately be explained."

BIBLIOGRAPHY

1. Cooley, T. B., Happ, W. H., and Sanford, H. N.: Round table conference on disorders of the blood and the hemopoietic system, *J. Pediat.* 1: 635 (Nov.) 1932.
2. Abt, A. F.: Anemia of new-born, *Am. J. Dis. Child.* 43: 337-349, Feb. '32.
3. Segar, L. H., and Stoeffler, W.: Anemia of new-born in 3 successive Siblings, *J. Pediat.* 1: 485-490, Oct. '32.
4. Merritt, K. K., and Davidson, L. T.: Blood during first year of life; anemia of prematurity, *Am. J. Dis. Child.* 47: 261-301, Feb. '34.

5. Mackay, H. M. M.: Normal haemoglobin level during first year of life: revised figures, *Arch. Dis. Childhood* 8: 221-225, June '33.

6. Parsons, L. G., and Hawksley, J. C.; Studies in anemias of infancy and early childhood, anhaematopoietic anemias (deficiency diseases of erythron): nutritional anemia, and anaemias of prematurity, scurvy and coeliac disease, *Arch. Dis. Childhood* 8: 117-144, April '33.

7. Abt, A. F.: Diagnosis and treatment of anemias of infancy, *Illinois M. J.* 64: 572-578, Dec. '33.

8. Parsons, L. G.: Anemias of infancy and early childhood; some observations, *J. A. M. A.* 97: 973-979, Oct. 3, '31.

9. Gladstone, S. A.: Iron in liver and in spleen after destruction of blood and transfusions, *Am. J. Dis. Child.* 44: 81-105, July '32.

10. Lucas, W. P., and Fleischner, E. G.: Abt's *Pediatrics*, Vol. IV: 501.

11. Buhrman, W. L., and Sanford, H. N.: Is familial jaundice of new-born infants erythroblastosis? Report of 2 cases, *Am. J. Dis. Child.* 41: 225-235, Feb. '31.

THE TREATMENT OF THE ANEMIAS OF EARLY INFANCY*

By
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As we have just heard the preceding essayist state, anemias may be due to lack of mineral elements, organic elements or the food accessory substances necessary to bring about the utilization of one or both of these, along with functional failures. As stated also, some of these anemias have obscure etiologies and therefore our therapy is handicapped by this lack of knowledge as to where and how to attack.

In an attempt to outline any treatment of anemia it seems not out of place to say something about the general hygiene and care of the patient. We are sometimes so interested in attempts to apply something of specific therapeutic value that we overlook this important aspect. Fresh air, sunshine, and, at times, a change of climate are valuable adjuncts to almost any treatment and in some instances constitute the only line of attack.

Hart, Steenbock and their co-workers showed that it was necessary in the administration of iron to use iron which contained copper, although only a trace seems suf-

ficient. Apparently it acts as a catalyst. Others have added manganese. Castle and Whipple advocate these and are also working on a rather indefinite something called the "intrinsic factor" which may solve some of our troubles. As Dr. Kennedy brought out, we are all thankful for the recent advance in therapy in the form of liver and its principles. The vitamins, chiefly B, C and G, are coming in for a great deal of attention also. Laurens and Mayerson demonstrated that irradiation with the carbon arc and mercury vapor lamps produced an increase in erythrocytes and reticulocytes. The best results were obtained with massive doses rather than small repeated exposures. Contrary to expectations, however, there was no increase in hemoglobin in severe secondary anemia. There must also be adequate food.

In the first condition discussed, anemia of the new-born, we find divided opinion as to whether no treatment is indicated or transfusions are beneficial. Abt, Bonar and Smith all claim that these cases recover without treatment while others advise transfusions.

Familial icterus gravis or erythroblastosis is another condition where therapy is largely experimental. Cooley advocates splenectomy while other writers advise repeated transfusions.

In considering anemia of the premature we find there are several theories as to the cause, the two most popular being lack of iron reserve and functional insufficiency. Abt and Nagel, reporting on the prophylaxis of premature anemia reach the conclusion that iron alone is of doubtful value as is the use of liver or hog stomach alone. However, the combination of iron and liver is much more successful.

The anemia that comes to our attention most frequently in early infancy is of the nutritional or deficiency type. Iron is the chief lack here and it is most often seen where there is too long dependence on milk alone or where there is a deficiency in the inherited storage. Maurer, Greengard and Kluver treated a series of cases of this type by giving one group iron, with traces of copper, and another group liver extract with traces of copper. Those gaining well were given saccharated ferrous carbonate,

*Third and last part of a symposium on the subject, presented to the Association in annual session, Birmingham, April 17, 1934.

15 grains three times daily. Those not doing so well were placed on concentrated liver extract 2 cc., three times daily. Iron was given to four of the liver group not doing well and liver to two of the iron group not doing well with improvement noted in both. They reached the following conclusions:

1. It is possible to control the anemia of early infancy by administering iron which contains a trace of copper and liver extract.
2. The administration of iron with traces of copper failed to bring about improvement in 50% and liver alone in 37%. Both seemed to benefit when stationary by the addition of the other.

Lewis treated a series of nutritional anemias with saccharated carbonate of iron, 15 to 60 grains daily, and from one to two teaspoons of a .5% solution of copper sulphate. He states that no case in the series failed to respond to the iron and copper, clinical improvement being gradual with the earliest sign being increased appetite, general well-being and gain in weight. The red blood count rose promptly, the hemoglobin more slowly.

It has been suggested that we are all prone to look for too rapid results no matter what the therapeutic agent employed. Only traces of copper and manganese are necessary. Most writers advise the use of the following in administering iron:

Sacc. carbonate of iron—15 to 60 grains daily.

Reduced iron—3 to 5 grains three times daily.

Iron and ammonium citrate—15 to 60 grains daily.

Cacodylate of iron, 5% sol., 3 minims intramuscularly for a 10 pound baby and 7 minims for a 15 pound baby, daily for 5 or 6 days and then every second day for 10 days.

Rest a couple of weeks and repeat if necessary.

To sum up briefly, it seems to me that until more definite knowledge is available as to the exact nature and causes of these anemias, it would be wise to give both iron

and liver and in the winter months expose the patient to the actinic ray when sunlight is not available. Of course, those cases which need immediate increase in blood and those in which the hemopoietic system seems at fault should have the benefit of transfusion. We have seen cases where a stationary condition seemed to have been reached which started mending again after transfusion. This same observation has been made where the delay was due to infection. And one last bit of advice if you would treat these little ones successfully. Be familiar with the last new product detailed in your city for Dr. So and So will be using it with wonderful success and Mrs. Gad-About will have returned from a visit to another city where a baby has just been saved by a "new treatment". Then, too, there may be real good in the product. I am sold on some of them myself.

BIBLIOGRAPHY

1. Lewis, M. S.: Iron and copper in treatment of anemia in children, *J. A. M. A.* 96: 1135-1138, April 4, '31.
2. Maurer, S., Greengard, J., and Kluver, C.: Value of liver extract and iron in anemia of young infants, *J. A. M. A.* 98: 1069-1072, March 26, '32.
3. Abt, A. F.: Anemia of new-born, *Am. J. Dis. Child.* 43: 337-349, Feb. '32.
4. Bonar, B. E., and Smith, E. H.: Anemia in new-born, *Am. J. Dis. Child.* 45: 594-598, March '33.
5. Abt, A. F., and Nagel, B. R.: Prophylaxis of anemia of premature infants; use of various agents in attempt to prevent development of so-called physiologic anemia of premature infants; preliminary study, *J. A. M. A.* 98: 2270-2275, June 25, '32.
6. Cooley, T. B., Happ, W. H., and Sanford, H. N.: Round table conference on disorders of the blood and hemopoietic system, *J. Pediat.*, Nov. '32.
7. Merritt, K. K., and Davidson, L. T.: Blood during first year of life; anemia of prematurity, *Am. J. Dis. Child.* 47: 261-301, Feb. '34.
8. Mayerson, H. S., and Laurens, H.: Effects of carbon arc radiation on blood of dogs, *Am. J. Physiol.* 86: 1-14, Aug. '28.

The Infected Diabetic—All infections in the diabetic, whether acute or chronic, have a harmful effect on the carbohydrate metabolism, and secondarily on the related fat and protein metabolism. There results from the infection a reduced tolerance for carbohydrates, a lessened response of the organism to insulin, a tendency to acidosis, and definite disturbances in water metabolism. Acute infectious processes cause the most marked changes, but chronic infections also alter the metabolic response, though in a less marked degree, and seldom produce an acute emergency.—*Hundley, Virginia M. Monthly, July '34.*

CRYPTORCHIDISM AND ACUTE GONORRHEAL EPIDIDYMITIS*

REPORT OF CASE IN TEN YEAR OLD BOY

By
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Gonorrhea in the male occurs with such regularity that it can almost be considered as being epidemic in nature. Infection of the urethra before the age of puberty, while not often seen in private practice, is not uncommon in clinic patients. In the male child gonorrheal epididymitis occurs very infrequently and in an undescended testicle it is exceedingly rare. Therefore, I feel that this case is of sufficient interest to warrant recording it in the literature.

CASE REPORT

R. H., No. 13488, male negro, age ten, was seen in the Urologic Clinic of Hillman Hospital, July 26, 1933.

The following history was obtained from his mother. One week previously the patient began to complain of frequency and dysuria. At this time he was voiding four times at night and every hour during the day with marked terminal dysuria. Three days following the onset of the dysuria a urethral discharge was noted. The day following the appearance of the discharge the left testicle began to pain and swell. The patient had not received any previous treatment.

The patient admitted having had intercourse with a fourteen year old negro girl. I have treated several males below the age of puberty for gonorrhea and in the majority of instances the infection was contracted through coitus. A few of them have not only confessed to having had intercourse but related with pride their sexual conquests. In most instances their sexual companions were older than they and probably the aggressor in the act.

The examination revealed a well developed colored boy. The temperature, pulse, and respiration were normal. The urethral meatus was inflamed and edematous; pus could be expressed from it. Both testicles were located in the inguinal region just outside the external ring. The mother stated that at birth the testicles could not be palpated but at a later date they descended through the inguinal canal and were arrested in their descent just outside the external ring. They have remained in this location since that time. The right testicle was normal except for its abnormal location. The left epididymus was enlarged and very painful to touch. The testis was not enlarged or tender. Due to the location of the testicle the cord could not be palpated. Rectal examination was negative except for a slight induration of the left seminal vesicle region.

The urethral smear was positive for gram-negative intracellular diplococci. The first and second glasses of urine were cloudy and terminal dysuria was marked.

The following diagnoses were made: (1) Bilateral cryptorchidism; (2) Acute gonorrheal infection of the left epididymus; (3) Acute gonorrheal infection of the anterior and posterior urethra.

The patient was returned home with the following instructions: (1) To remain in bed for three days; (2) An ice cap to be kept continuously to the left inguinal region; (3) A glass of liquids to be given every hour during the day; (4) Sandalwood oil, minims five (in capsules), to be given after each meal.

July 31, 1933: The patient returned to the clinic and volunteered the information that he felt much better. The left epididymus was no longer painful but was tender to palpation. He was voiding once at night and every four hours during the day with only slight dysuria. The urethral discharge was present and both glasses of urine were cloudy.

August 4, 1933: The left epididymus was enlarged but not painful. No discharge had been noted during the past twenty-four hours; the first and second glasses of urine were cloudy. The sandalwood oil capsules were continued.

August 15, 1933: There was present a slight induration of the left epididymus but it was not painful to palpation. The patient had been up and about since the last visit. No discharge had been noted since August 3, 1933. Both glasses of urine were clear. He was instructed in the art of using a one-fourth per cent solution of protargol as an anterior urethral injection three times a day.

This treatment was continued and the patient seen every four or five days until September 23, 1933. At this time he was discharged as cured and instructed to return in three weeks using no treatment in the meantime.

October 21, 1933: The patient returned on this date for observation. No frequency, dysuria, or discharge has been noted since the last visit. Both glasses of urine were clear and free of shreds. Only a slight induration of the left epididymus remained.

He was advised to enter the hospital for an orchiopexy. This advice was refused. The patient has not been seen since that date.

Medical Arts Building.

Epilepsy of Allergic Origin—It is well within the range of possibility that a study of the allergic idiosyncrasies of cases of infantile convulsions, and the regulation of the diet in accordance therewith may, in certain cases, prevent the onset of epilepsy in later years.

Where an epileptic patient gives a family history of allergy, or shows some other allergic manifestations himself, such a study is especially indicated.

If such studies can relieve but a small percentage of the unhappy sufferers from this tragic affliction, the time devoted to making the investigations will be indeed well spent.—*Clarke, New York State J. Med., July 15, '34.*

*From the Urologic Service of Hillman Hospital.

THE JOURNAL

OF THE

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August 1934

THE NEW PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION

In 1868 Dr. William O. Baldwin of Montgomery was elected President of the American Medical Association, at the first meeting after the Civil War with Southern delegates present. Since that year a number of prominent Southerners have held this high office, but no Alabamian has been so honored until this year, when Dr. James S. McLester of Birmingham became President-Elect, to take office in 1935. Southern physicians in general and Alabama practitioners in particular rejoice at this well merited recognition of one of their number.

Dr. McLester was born in Tuscaloosa, Alabama, in 1877 and graduated from the University of Alabama in 1896. His degree as Doctor of Medicine was bestowed by the University of Virginia Medical Department in 1899 and this was followed by postgraduate study in Gottingen and Freiberg in 1901 and 1902. Between 1902 and 1912 he was Professor of Pathology and later Professor of Medicine in the Birmingham Medical College. In 1907 and 1908 he did postgraduate study in Berlin and Munich. During the World War he served as Major and Chief of Medicine in the Base Hospital at Camp Sheridan and was promoted to Lieutenant-Colonel in the American Expeditionary Forces, becoming commanding officer of Evacuation Hospital 20 in 1918. During this time he was also a consultant in

the medical service. In 1919 he became Professor of Medicine at the University of Alabama, which position he now holds.

Dr. McLester has contributed much to medical literature. His book, "Nutrition and Diet in Health and Disease", is widely acclaimed as one of the best of modern texts on diet. He is also the author of "The Diagnosis and Treatment of Disorders of Metabolism", and contributed the chapter on the mediastinum in the Oxford System of Medicine, and the chapter on syphilis in Cecil's textbook. He was Chairman of the Section on Practice of Medicine at the 1920 session of the American Medical Association and served as the Section's representative in the House of Delegates in 1921 and from 1929 to 1933 inclusive. He is a member of the Board of Regents of the American College of Physicians, and for many years has been a member of the Association of American Physicians. Since 1929 he has been a member of the Council on Medical Education and Hospitals and since 1933 a member of the Committee on Foods of the American Medical Association. In 1920 he was President of the Medical Association of the State of Alabama and since 1928 has been a member of its Board of Censors.

Dr. McLester has long been an outstanding internist, fully abreast of the latest scientific developments but at the same time practical and level headed, not given to following foolish fads or fancies. Sane in his viewpoint, honest in his expressions, humane and upright in his private life, Dr. McLester has been a safe leader to follow. He has been interested, not only in the science and art of medicine but also in medical economics and has been justly called a "medical statesman."

To his scientific skill and acumen he adds a charming personality and great culture. His colleagues in Alabama felicitate him on this great honor and bask in the reflected glory that it sheds on them. F. W. W.

THE CARRIER PROBLEM IN AMEBIASIS

Referring to the lack of precise knowledge of amebic dysentery, McCoy¹ states "the outbreak . . . in 1933, which centered

1. McCoy, G. W.: Some facts and limitations in amebic dysentery control, Pub. Health Rep. 49: 359-360, March 16, '34.

at Chicago, emphasized the fact, well known to special students of the problem of amebiasis, that we do not have sufficient information as to the factors governing transmission of this disease to enable us to take precisely directed and fully effective measures for its suppression." Recent studies have caused us to revise certain of our ideas concerning the importance of carriers in the spread of this disease.

Most text-books on tropical medicine have maintained that the chief factor in the distribution of amebiasis was the encysted amebae in the stools of convalescents or symptomless carriers. The danger of such a carrier, when engaged in the preparation of food, was assumed to be greatly enhanced. Numerous surveys for the presence of *Endameba histolytica* in the stools of certain population groups have been made in the United States with varying results. These, however, have definitely demonstrated that amebiasis is much more prevalent in temperate climates than was heretofore believed. In summing up the literature Craig² states, "enough has been done to warrant the statement that it is conservative to estimate that between 5 and 10 per cent of the people of this country harbor *Endameba histolytica*. . . . If we are very conservative, the evidence is certainly sufficient to warrant us in stating that 1 per cent of the population, or 1,200,000 are harboring *Endameba histolytica*".

With this large incidence of carriers it is surprising that more active cases of the disease do not occur. Experiments with human volunteers have shown that the feeding of cysts from healthy carriers would produce amebic dysentery. Kessel³, working with kittens, proved that the amebas obtained from carriers were as virulent as those which emanated from cases of the disease. Meleny and Frye⁴ have present-

ed evidence of difference in pathogenic activity in kittens in five carefully studied strains of *Endameba histolytica*. If these experiments are substantiated, it may help to explain some of the rather obscure questions in the epidemiology of amebiasis. Of course, the spread of any infectious disease depends on many factors, some of which are controlled by chance. If a variation in virulence is conceded, then the matter of dosage becomes an important one.

The question of the resistance of the encysted forms has recently received attention. By inoculating the hands with cysts, Spector and Buky⁵ found that the viability of these forms was much less than was formerly supposed. Their conclusions are that "the conditions of the experiments provided for a fouling of the hands far in excess of any that would be likely to occur under ordinary conditions, even with the most untidy or willfully careless carrier. Nevertheless, the number of cysts of *Endameba histolytica* to survive beyond five minutes was very small in proportion to those killed, and it was exceptional that any survived beyond ten minutes".

McCoy¹, therefore, states that "(1) carriers of the *Endameba histolytica* do not appear to be as much of a menace as they were thought to be; indeed there is no clear evidence that carriers, even among food handlers, are an important source of infection; (2) the control of the spread of the infection by the detection of carriers and their exclusion from food-handling groups does not appear to be practicable on a large scale; (3) . . . There is no need for the isolation of carriers."

However, a recent editorial⁶ in the American Journal of Public Health advocates the continuance of the examination for carriers. The difficulties of such examinations are recognized but in the light of our present knowledge the writer maintains that they should not be discontinued.

J. G. McA.

2. Craig, C. F.: The amebiasis problem, J. A. M. A. 98: 1615-1620, May 7, '32.

3. Kessel, J. T.: Amebiasis in kittens infected with ameba from acute and "carrier" human cases and with tetranucleate ameba of the monkey and of the pig, Am. J. Hyg. 8: 311-355, '28.

4. Meleny, H. E., and Frye, W. W.: Studies of *Endameba histolytica* and other intestinal protozoa in Tennessee. V. A comparison of five strains of *E. histolytica* with reference to their pathogenicity for kittens, Am. J. Hyg. 17: 637-655, May '33.

5. Spector, B. K. and Buky F.: Viability of *histolytica* and *Endameba coli*, Pub. Health Rep. 49: 379-385, March 23, '34.

6. Editorial: The medical examination of food handlers, Am. J. Pub. Health 24: 645-647, June '34.

TRANSACTIONS OF THE ASSOCIATION

(Concluded)

Last Day, Thursday, April 19

The Association, sitting as the Board of Health of the State of Alabama, was called to order at 10:30 A. M. by President Garber.

The report of the Board of Censors was rendered by the Chairman, Dr. W. D. Partlow.

THE SIXTY-FIRST ANNUAL REPORT OF THE STATE BOARD OF CENSORS, INCLUDING ITS REPORT AS THE STATE BOARD OF MEDICAL EXAMINERS AND AS THE STATE COMMITTEE OF PUBLIC HEALTH.

W. D. PARTLOW, M. D., Chairman

PART I

The State Board of Censors begs to submit this, its Sixty-First Annual Report:

Foreword

At the last annual meeting of the Association this Board, in its introductory remarks, directed attention to the many rapid changes and precipitous re-adjustments now taking place within our social fabric and entered a plea for the awakening of a keener interest on the part of the medical profession in the many social and economic problems pressing for solution. At that time, and with the hope of further stimulating such interest, this Board recommended to the Association the abolition of the eight existing standing committees to be followed by the creation of certain new ones and the fusion or abandoning of certain others, bringing the present number of such committees to five. These recommendations were adopted by the Association and the Board here desires to commend the President of the Association and the Chairmen and members of the several committees for the enthusiasm displayed and the work done. As provided by ordinance, these several committees, after creation by the Association, are for the purpose of rendering such assistance to the President as seem desirable in the conduct of the Association and are to submit annually, to the Association, reports bearing on their activities. These reports, as well as all matters pertaining to the usages, policies and interests of the Association, are received by it and referred to the State Board of Censors for study, analysis and recommendation and by this Board submitted back to the Association for final action. In this manner are all the practices and policies of this Association determined. These reports have received careful consideration at the hands of the Board and will be dealt with individually later on.

Finances Of The State Health Department

It will be recalled that when the annual meeting of this Association was held last year in Montgomery the second extraordinary session of the State Legislature had just adjourned, on April 14th. The first extra session, held in 1932, had reduced the appropriations for health work by 41.7 per cent, and had enacted into law the Budget and Financial Control Act limiting expenditures to actual income and further providing, in the event of a deficit, for a proration among certain departments of the available funds. The second extra session had been called because of the dwindling income to the State and the threatened collapse of the State government and with the hope that the legislature might find a solution. Such was not found; and this Board and the State Health Officer were immediately confronted with the difficult task of providing for the people of this State such limited health protection as the meagre funds which might become available would secure, during the remainder of the fiscal year ending September 30, 1933. After mature deliberation and conference with the State Comptroller the Board recommended to the Association the following resolution which was adopted:

"In view of the financial crisis now confronting the Health Department of this State, and wishing to encourage the State Health Officer in his efforts towards economy, and at the same time to comply with the laws of this State, this Board instructs the State Health Officer immediately to discontinue all activities not coming within the police powers of this department."

This blow was both drastic and telling, in that many of the worth-while activities, built up over the years, had to be totally abandoned as well as many essential ones stripped to the bone. There remained to the central organisation but a bare skeleton clothed in the garb of a policeman. The State subsidy to county organisations—amounting to thirty-nine per cent of the total appropriation—was cut off practically in its entirety, as was also the special appropriation for Pasteur treatments; the venereal disease, oral hygiene, and tuberculosis programs, and the nursing bureau had to be abolished, and the personnel of the laboratories and all divisions brought to a minimum. But for the hearty cooperation of the Governor and the Director of the Alabama Relief Administration with the State Health Officer in his efforts to procure Federal aid to temporarily replace the State subsidy for the continuance of local health work in the various organised counties, the most of these would likewise have crumbled. The Board feels that this action was a distinct recognition of the efficiency of Alabama's health system and that the thanks and appreciation of this Association, which constitutes the State Board of Health, should be extended to those who

made possible the preservation of the integrity of this important phase of the state-wide health program.

At the beginning of the present fiscal year, October 1, 1933, the State has been able to resume its subsidy to counties and to provide some additional funds for the re-establishment of certain of the more important activities discontinued during 1933.

Even now, at the end of the first half of this fiscal year, the State Comptroller finds himself unable to assure this Board and the State Health Officer, with any degree of accuracy, what percentage of the present appropriation can be relied upon. Until such assurance can be had no definite plans for re-building can be formulated. In this connection, the Board takes occasion to commend the State Health Officer for the untiring efforts of himself and staff in preserving during this severe crisis so large a part of Alabama's health system and to express the hope that upon this retained nucleus may again be built an even sounder health structure.

Salary Of The State Health Officer

Section 1053 of the Code of Alabama places upon this Board the responsibility of selecting the State Health Officer and of fixing his term of office and salary, not to exceed a certain amount. In October 1932, this Board, when considering ways and means of minimising the cost of all health activities during the present crisis, and before any legislative action had been taken in the matter of salary reduction for State employees, imposed a reduction of thirty per cent upon the salary of the State Health Officer, as well as fixing a sliding scale of reduction to be applied to the other employees of the department. This reduction of salary was accepted, without protest, by the State Health Officer. On the last day of the second extraordinary session of the legislature of 1933 the Harrison substitute to the Lapsley-Lusk Bill, providing for salary reductions for various State officers, was passed by both houses and approved by the Governor. In the Harrison bill the salary of the State Health Officer was fixed at \$3,600 per annum. In the face of the above facts the State Health Officer requested an opinion from the Attorney General of the State in the matter of his salary. This official ruled that the provisions of the Harrison Act did not apply to the State Health Officer; which opinion seemed further strengthened by a previous decision handed down by the Supreme Court of the State in which it had been held that the State Health Officer was an officer of the Board and not of the State. Upon presentation of this opinion from the Attorney General by the State Health Officer to the State Comptroller, the latter refused to be guided by it. Upon the advice of counsel, this Board was called together for the purpose of having properly presented to it the legal phases of the question involved and to decide upon a suitable course of action. At this meeting it was clearly set forth by the counsel that the *basic principles of administration* incorporated into Alabama's health system which, by law had been dele-

gated to the organised medical profession of the State, constituted the real point at issue rather than the dollars and cents which might be involved in the salary of the Board's executive officer. Such being the case, the Board's counsel was of the opinion that the necessary steps should be taken to have the courts definitely establish the legal status of the Board of Health, as now constituted. At the conclusion of the Board's deliberations the following resolution was unanimously adopted:

"*Resolved*, That this Board does hereby endorse any action of the State Health Officer to maintain the power and authority of the State Board of Health to exercise exclusive control over its executive agent, the State Health Officer, during the period for which he was heretofore elected by it, pursuant to the authority vested in it by the laws of this State."

Immediately following this meeting of the Board, held on October 6, 1933, the Board's counsel, in the name of the State Health Officer, entered mandamus proceedings in the circuit court of Montgomery County against the State for the payment of the salary as fixed by this Board. This court rendered a decision upholding the position taken by the Board's counsel that the State Health Officer was an officer of the Board with a definite contract for a fixed period which could not be violated; whereupon the State appealed the case to the Supreme Court.

On March 15, 1934, the Supreme Court handed down a majority and a minority opinion; the majority opinion, written by Justice Bouldin, and concurred in by Justices Anderson, Gardner, Brown and Foster, reversed the judgment of the Circuit Court; the minority opinion, written by Justice Knight and concurred in by Justice Thomas, upheld the judgment rendered in the trial court. Counsel for the State Health Officer advised and asked for a re-hearing of the case, and arguments and briefs were, on March 29th, 1934, filed with the Supreme Court. At this date the Court has not handed down its decision on the re-hearing of the case.

Alabama's Tuberculosis Problem

While Alabama possessed, prior to the world-wide debacle, a health system of exceptional and outstanding efficiency as it pertains to the local distribution of community health service, it is with a feeling akin to chagrin that this Board takes cognizance of the puny efforts put forth by this State in the matter of tuberculosis control on a state-wide basis. The annual number of deaths from tuberculosis in Alabama ranges between 2,100 and 2,300; in 1930 it was 2,282; in 1931, 2,315; in 1932, 2,128; in 1933, 1,921. Based upon these figures, it may be conservatively computed that there are within our borders some 15,000 active cases of tuberculosis. For the United States as a whole tuberculosis is the seventh cause of death; in Alabama it is the third cause of death, being exceeded only by heart disease and nephritis. No one, be he physician or layman, can deny that the gravity and proportions of this problem are such as to call

forth the serious concern of all; and it most certainly should of this group constituted, by law, the guardians of the people's health. This State has no state-owned-and-operated institution for this purpose; nor has this Board fostered such a project, although such an approach has been the usual one made by those states seeking a solution of their tuberculosis problems. It has been felt that, from the standpoint of institutional care and control, a sounder and more economical approach could be had through the encouragement of local effort and responsibility within a county or district, with the State participating in the nature of subsidies for maintenance and upkeep. This Board and this Association approved legislation looking to this end and the legislature of 1931 passed a bill carrying these provisions. However, in the appropriations made by the last legislature the State subsidy to counties for this activity was not provided for. Without proper financial participation on the part of the State in this important program the Board feels that even this initial effort at institutional control is doomed to failure. The Board, therefore, desires to urge upon the members of the Association the vital need for the restoration of the financial provisions of this act for creating tuberculosis sanatoria, and to express the hope that concerted effort will be made looking to this end.

The Board also desires to direct attention to the importance of the detection and recognition of the early or incipient case of tuberculosis from the standpoint of both proper control and successful treatment. The almost spectacular results obtained through the scientific application of the various surgical procedures of collapse therapy make more necessary than ever the need for early diagnosis. Many of these cases can be rendered harmless and restored to useful life at home and through the efforts of local physicians applying modern scientific therapy of the sort just mentioned. However, early recognition is not possible in the absence of certain scientific procedures and equipment, foremost amongst which is the employment of the x-ray. In bridging over this gap and in furnishing physicians a dependable, consultative service in this important field, the Board feels that the traveling chest clinics, inaugurated some two years ago, serve a most useful purpose, as evidenced by many appreciative letters from physicians throughout the State. The aid thus rendered in stressing both to physicians and laymen the need for early detection of this protean disease will, by virtue of a wider dissemination of such knowledge, lead many to seek competent medical service and treatment. In proportion to an appreciation of these facts and needs on the part of the general medical profession and in proportion to its ability to apply this newer scientific therapy, will the physician broaden his scope of usefulness and enlarge his financial returns. In this connection the Board indulges the hope that, at many points within the State, one or more physicians may be stimulated to make themselves proficient in the application of these procedures which now are available only in sanatoria and at points usually far removed from the patient's home.

The President's Message

(Page 19—July Journal)

The Board cannot refrain from taking this occasion to congratulate the President on his most scholarly and thoughtful message. At this time it seems peculiarly fitting and appropriate that the attention of our age-old profession should thus be focused on the cultural, the spiritual and most worth-while things of life. At this stage in the development of our social progress and structure there is needed, as has never been needed before, the leadership of sound and well trained minds. Our President beautifully directs attention to the fact that within our own professional group are to be found many such minds, whose activities and efforts should be concentrated and utilised to the best possible advantage in the solution of the manifold problems now confronting not only our profession but all mankind. The Board unhesitatingly commends this message to the careful reading of all the members of our Association.

FIRST RECOMMENDATION

That the sum of \$750.00 be assigned to the President of the Association to defray the expenses of this officer and those of the various standing committees when discharging their official duties for the Association, and that the President have absolute control of the expenditure of this fund.

The Board is fully mindful of the zeal, ardour and enthusiasm which have characterised the efforts of our President and the various standing committees during the past year and desires to express profound appreciation for the interest which has been aroused amongst the physicians of the State as an outgrowth of such effort. The value of these labours is quite beyond computation. The Board further appreciates the good to be gained through frequent visits on the part of our President to as many medical gatherings as his time may permit. Quite true it is that the duties of this high office are likely to prove not only exacting of the President's time but possibly also something of a slight financial strain as well. However, no member of this Association can afford to lose sight of the fact that the bestowal of this signal honour, coming but once in the life time of a member, carries with it likewise a call to service not only for the membership of this Association but likewise a call to service for the citizenry of the entire State. In all professional and scientific bodies, and more particularly our own profession, this spirit of a willingness to serve without hope or desire for reward, other than comes through service faithfully and well performed, should never be permitted to perish. The Board also feels that this same unselfish spirit should dominate and control not only the officers of this Association, but also those members who have been signally honoured as to be chosen to do the work of this Association on its various committees. In the light of these facts, coupled with a reduced membership within the Association, now less than 1,500, and a reduced revenue from The Journal because of a shrinkage in advertising ma-

terial, the Board feels that both from the standpoint of tradition and policy, as well as for sound business considerations, this recommendation of the President should not be concurred in.

On motion, duly seconded, the Association approved the recommendation of the Board.

SECOND RECOMMENDATION

That a grant of \$100.00 be set aside annually as an honorarium for the Jerome Cochran lecturer.

At the annual meeting of this Association in 1931 President Harrison made a similar recommendation, at which time the Board endeavoured to point out that because of the signal and exceptional honour conferred upon the one chosen by the President to pay this tribute to the memory of our founder, such distinction to him should in no way be marred by even the semblance of gain or reward. This speaker, without exception, has always been a man of such outstanding attainments as to sense that the honour conferred was ample reward. The Board still entertains these views; and, therefore, declines to endorse this recommendation of the President.

On motion, duly seconded, the Association approved the recommendation of the Board.

THIRD RECOMMENDATION

That this Association defray the transportation expenses of its delegates—now three in number—to the annual meetings of the American Medical Association.

While the Board appreciates the fortifying arguments entertained by the President and those in sympathy with such a policy, and likewise appreciates the importance of having this Association suitably and adequately represented in the councils of the national organisation, yet for the reasons just given above it does not feel that this recommendation of the President should receive the approval of this Association and it so recommends.

On motion, duly seconded, the Association approved the recommendation of the Board.

FOURTH RECOMMENDATION

That the present Editorial Staff of the Journal, composed of three members of the Board of Censors, the State Health Officer, and the Secretary of the Association, be so modified as to include one member of the Board of Censors, the President and the retiring President and cites, among the reasons given for such modification that, as now constituted, the Journal is dedicated to but one arm of the Association, the State Committee of Public Health.

The Journal, now and from its beginning, has carried four principal sections: Scientific, Association Forum and News, Public Health and Editorial. At all times, any and all of these sections have been open to all officers, to all committees and to all members of this Association. Whenever a question has been presented to the Editorial Staff which involved a change of operating policy, it has been referred to the State Board of Censors, under whose direction the Journal is published, for final

pronouncement. The Board feels that a careful perusal of the Journal from month to month will hardly substantiate the statement that this organ is dedicated to but one arm of the Association; viz., the State Committee of Public Health. The reasons for a section on public health in this Association's official organ should be so manifest to all members as to need no comment from this Board. The Association Forum section has been freely used by our officers and members, on many occasions, for the purpose for which it was created; namely, to discuss pertinent topics of general interest to the entire membership. In the light of these facts and from the experience thus far gained by the Journal's present staff, the Board does not feel that it would be the part of wisdom to disturb the existing set-up and therefore declines to give approval to this recommendation of the President.

It was moved and seconded that the recommendation of the Board be adopted. After discussion and on call for the question, seventy-five voted to sustain the recommendation of the Board; thirty-two voted against concurrence. The motion prevailed.

FIFTH RECOMMENDATION

That the State Board of Censors, when sitting as such or as a State Committee of Public Health, extend the courtesy of an invitation both to the President and to the Chairmen of standing committees, when pertinent questions within their several spheres are being considered.

In this recommendation the President senses, and the Board welcomes the expression by the President, the absolute need for the closest possible cooperation and understanding between this Board, which serves this Association as its deliberative and analytical body, and its administrative officers and committee chairmen. While in our Constitution and ordinances the duties and functions of each of these is broadly defined, and if properly performed, quite time consuming, the Board is in hearty accord with the sentiment expressed for the need of close interplay between all of the working departments within this organisation and will gladly call upon its officers and committee chairmen for their counsel and aid whenever it is felt that light might be shed from these sources upon any problem receiving their consideration. To the extent, therefore, of securing such additional information and counsel that the Board may feel the need of, the Board expresses its approval of this recommendation of the President.

The Board's recommendation was adopted by the Association.

SIXTH RECOMMENDATION

This recommendation, in the opinion of the Board, now transcends in importance all others of the many which have been made at this meeting; it deals in clear and lucid style with the tremendous legal responsibility resting both upon this Association and the Board in the important regulatory and enforcement phases of the Medical Practice Act of this State.

To begin with, it is of paramount importance for the membership of the Association to constantly bear in mind the three distinct ways in which the State Board of Censors serves the Association and through the Association, the people of this State:

- (a) As a Board of Censors.
- (b) As a Committee of Public Health.
- (c) As a Board of Medical Examiners.

When sitting as a Board of Censors its jurisdiction is limited to the membership of this Association.

When sitting either as a State Committee of Public Health or as a Board of Medical Examiners its jurisdiction and scope include not only its own membership but the entire population of the State whose welfare in these two important particulars has been entrusted to this Association.

For example: The law specifically makes this Board its sole agent for medical licensure in the State and clothes it with all necessary authority for issuing or for revoking certificates of qualification to practice. In this sphere the Board of Medical Examiners not only conducts the usual examinations for applicants seeking license to practice, but devotes much time to the hearing and investigation of cases involving various infractions of the law, such as illegal practitioners, violators of the Federal Narcotic Law, the excessive use of spirituous liquors, and the like. For the excessive use of alcohol two certificates have been revoked during the past year, and the status of several narcotic violators and habitues carefully looked into. This Board feels that its responsibility in the matter of narcotic violators is so great that, in August of last year, it decided to automatically revoke for a period of one year after the termination of a penitentiary sentence the license of any physician who had served such a sentence in the Federal prison for violation of the Federal Narcotic Law. Here is presented a legal responsibility of first importance, and, regardless of its distasteful aspects, must be faced squarely and impartially. No other state of the Union has manifested such confidence in the organized medical profession. The same holds true in all matters pertaining to public health. The Board, therefore, not only gives approval of this recommendation of the President, but urges that in all your deliberations and acts the clearly defined legal responsibilities of this Board and of this Association be kept ever in mind.

The Association's approval was placed on this recommendation of the President.

SEVENTH RECOMMENDATION

That all officers and chairmen of standing committees of the Association be given the right to vote on matters of policy at the annual meetings of the Association.

Article IV of the Constitution of this Association clearly defines the privileges and limitations of members who are not delegates or counsellors. Inasmuch as the entertainment of the suggestion embraced in this recommendation necessitates an amendment to the Constitution and inasmuch as no

such amendment has been submitted, the Board declines to endorse this recommendation.

On motion, duly seconded, the recommendation of the Board was adopted.

EIGHTH RECOMMENDATION

This is in the nature of a plea for a more cordial entente and relationship between practising physicians and all social and health workers, whether official or volunteer.

The Board feels that such a relationship is a *sine qua non* to the success of any and every effort looking to human betterment and gives unqualified approval to these suggestions of the President.

The Association concurred in this expression of the Board in acting on the President's recommendation.

NINTH RECOMMENDATION

That this Association make known to the boards of the several State institutions and relief organisations whose activities embrace important health and medical problems, the advisability and need for having adequate medical representation on such boards.

The Board heartily endorses the sentiment here expressed by the President and recommends its approval by the Association.

The Association concurred with the Board in giving approval to this recommendation of the President.

CONCLUSION

The President then closes his message with a most fitting and appreciative word to the members of this Association for the honour bestowed upon him by being granted the privilege of serving his fellow men and them.

On motion, duly seconded, the report of the Board on the President's Message was adopted as a whole.

Report Of The Vice-Presidents

(Page 22—July Journal)

The splendid and enthusiastic work which has been done throughout the State by all of our Vice-Presidents during the past year in an effort to swell the membership of the various county medical societies and to promote a livelier interest in the scientific and economic aspects of the medical profession is highly commendable and deserving of the thanks and appreciation both of the Board and of this Association. The four Vice-Presidents have submitted a joint report in which the following recommendations are made:

The first recommendation suggests that the present constitution for county medical societies, which appears in Part II of the Compend, be changed in certain particulars as it relates to the dues of members of county medical societies.

The Constitution of this Association, other than defining who shall be eligible for membership in

county medical societies, does not presume to interfere with the autonomy of the various medical societies entering into its composition. It is perfectly proper and within legal bounds for an individual county medical society to adopt such rules or by-laws as it may see fit governing the dues of its members. All such matters are to be viewed as details which can best be adjusted by the local members of a society. The model constitution in the Compend is merely to serve as a guide in shaping the constitution of a county medical society. Consequently, the Board does not feel that this recommendation presents a matter requiring action on the part of the Association, and for this reason does not recommend its approval.

The recommendation of the Board was duly adopted by the Association.

The second recommendation deals with the amendment of Article XIV, Section 1, of the Constitution of this Association.

Inasmuch as all constitutional amendments have to lie over one year before being acted upon, the Board so recommends.

The recommendation of the Board was adopted, the proposed amendment to lie over for one year.

The third recommendation suggests that each Vice-President select four assistants to aid him in better discharging the duties of his office within his district.

The Board feels that by a careful selection of such assistants on the part of the Vice-Presidents his work may be materially enhanced and expresses approval of this recommendation, provided no additional expense to the Association is incurred.

On motion, duly seconded, the recommendation of the Board was adopted.

The fourth recommendation suggests that both this Association and county medical societies give consideration to the need for making necessary provision for having licensed coloured physicians benefit by our scientific meetings whenever held.

The Board is in entire accord with the purpose of this suggestion and recommends that every effort be made by county medical societies to improve the standards of practice among the coloured profession of this State. The Board feels that it would be quite proper for county medical societies, at their regular scientific meetings, and at their district meetings, to encourage the attendance of coloured physicians upon such meetings and so recommends.

The Association adopted the recommendation of the Board.

The fifth recommendation is to the effect that Vice-Presidents, in addition to expenses incident to their offices now being cared for by the Association, be allowed a travel expense of five cents per mile, such allowance not to exceed \$75.00 each and to be paid through proper channels upon itemised statements submitted.

While the Board appreciates the sacrifice both in time and money made by our Vice-Presidents in their effort to stimulate increased membership and greater scientific production, it feels that the same logic and reasoning just expressed regarding the financial recommendation made by the President should be made to obtain here, and therefore, does not give approval to this recommendation from the Vice-Presidents.

The Association adopted the recommendation of the Board.

The sixth and final recommendation deals with the question of immunisation practices as they relate to possible infringements upon the general practitioner and urges county boards of health to study these problems in relation to their particular needs and that county health units cooperate in all possible ways in seeing that the interests of the practising physician are properly protected.

The Board expresses approval of this recommendation.

The recommendation of the Board was adopted.

Report Of The Secretary

(Page 23—July Journal)

The Board finds that the books and records of the Secretary of the Association are complete, accurate and entitled to your approval.

The report of the Board was adopted.

Report Of The Treasurer

(Page 24—July Journal)

The Auditing Committee from the Board, after careful examination and review of the books of the Treasurer, finds them in excellent order and entitled to your approval.

The Association concurred in this expression of the Board.

Committee Of Publication

(Page 26—July Journal)

The report of the Committee on Publication indicates the keen interest manifested in the Journal by the many timely and beneficial contributions made during the past year. This Board bespeaks the continued interest of the membership in this official organ of the Association.

The report of the Board was adopted.

Reports Of Committees

1. Legislation and Medical Economics

(Page 26—July Journal)

The report of this Committee manifests an exceptional degree of activity and enthusiasm on the part of its Chairman and members. Among suggestions submitted is one looking toward the making of some financial provision for those members of the Association who might become totally disabled or totally dependent which seems to the

Board to possess possibilities which might well be further studied. In this connection the Board suggests that this Committee continue its investigation and study of this question and at the next annual meeting submit its recommendations.

Incorporated also are certain recommendations which, for purposes of simplicity, the Board will deal with seriatim.

1. The Davidson Resolution: At the last meeting of this Association, Dr. Marion Davidson, of Birmingham, introduced a resolution which sought the approval of the Minority Report of the Committee on the Costs of Medical Care. After some discussion from the floor, the Association voted to refer the resolution to the standing Committee on Legislation and Medical Economics. This Committee, after careful consideration of this resolution, recommends its adoption, with the following change: That, in lieu of the last paragraph which reads, "Resolved, third, that this Association recommend to its members that no new revolutionary departures from our present forms of practice be considered", there be substituted the following: "Resolved, third, that the Association recommend to its members that no revolutionary changes from accepted forms of medical practice be attempted without careful consideration and approval of them by this Association".

The Board expresses approval of this suggested change and recommends the adoption of the resolution as thus altered.

The recommendation of the Board was adopted.

2. "The committee recommends to the Association that it encourage its members to take an active part in civic affairs and in government."

The Board heartily endorses, both in spirit and sentiment, this recommendation.

The recommendation of the Board was adopted.

3. "Physicians complain to the President and to this Committee that no doctor is on the boards of trustees of the State institutions; that important welfare boards which expect doctors to work for them free of charge have no representation from the medical profession.

"This is not surprising. The fault lies with the profession. It cannot be corrected by complaint. The doctor must actively take part in the civic and governmental life of the people, if he wishes to hold place in the management of their affairs."

While these paragraphs carry no specific recommendations, they do direct attention to the advantage which might accrue to boards of trustees of certain of our State institutions having important medical problems, in placing on such boards one or more representatives of the profession. The Board is in entire sympathy with the implication made in this recommendation.

4. "The committee recommends to the county societies that one meeting a year be devoted to some phase or phases of legislation and medical economics."

The Board fully appreciates the need for greater interest and activity on the part of county medical

societies in the economic and social problems confronting every community and expresses its approval of the suggestion made in this recommendation.

The recommendation of the Board was adopted.

5. "The Committee recommends to the Association that it go formally on record as approving the precedent established during the past year by the President, in divorcing the administrative affairs of the profession from the State Department of Health, in fact as in theory. It recommends still further autonomy and self-determination on the part of the profession, looking to relief of the State Health Officer from the double burden imposed by past precedent and custom."

Article IX of the Constitution of this Association clearly and concisely prescribes the duties of the President. Section 5 of this Article reads as follows:

"He shall in the interval between the annual sessions direct and control the general policy and business of the Association, but always in accordance with the Constitution, precedents, and usages of the Association, and also with due regard to the opinion and advice of the Board of Censors and of the State Health Officer."

Throughout the current year this Board, through its Chairman, and in conformity to the constitutional provisions of this section, has been in frequent and intimate contact with the President, the administrative officer of this Association. It has not come to the attention of the Board, either through the President, or from any other dependable source, that the Health Department, which is but the creature of this Association, nor its executive agent—the State Health Officer—had indulged in activities of such a meddlesome nature as to warrant a recommendation "divorcing the administrative affairs of the profession from the Health Department". The indivisible oneness of organized medicine and public health constitutes the uniqueness, the philosophy and the strength of Alabama's health structure, and it is largely because of this oneness that success has crowned our efforts in this field. Of necessity, in the discharge of his manifold duties to the people as your executive health agent, the State Health Officer encounters many problems within that twilight zone of preventive medicine whose proper solution is of vital concern to the medical profession. So long as this Association continues to shoulder the important responsibility of administering all health activities, what more ideal or satisfactory condition could possibly exist, from the standpoint of the organized profession? This Association itself elects the health administrator from within its own ranks to do its bidding in all matters pertaining to health. In all of his official actions and contacts he is in truth but the articulate head and spokesman of the medical profession to which has been entrusted, by law, this vital responsibility. All of his acts are subject to review, modification or rescission by this Association. Without exception, since the beginning of Alabama's health system, this executive has been cho-

sen because of his long service in, and intimate familiarity with, our own peculiar organisation. In the light of these facts, instead of a divorcement or a drifting apart of the child from its parental moorings, there must be, if lasting success is to be had, an even closer fusion and understanding of the identity and purposes of each. The Board will welcome concrete evidence to substantiate the implications embraced in this recommendation; but, until such evidence is presented, declines to give approval to this recommendation.

The Association concurred in the Board's expression.

6. "The Committee respectfully urges official recognition by this Association of the fact that the attitude of the Federal Government toward payment of doctors for services rendered indigents on government rolls deserves condemnation. Appealing to the profession through the medium of its official Journals to play a patriotic part in time of stress, officially and in fact government regulations guiding state relief administrators placed the matter of payment on a trading basis, offering as the sole reason why fees should be reduced to a niggardly fraction of standard fees, the fact that payment was certain and reasonably prompt."

The Board, after careful study of Bulletin No. 7, issued by the Federal Government, in which were set forth rules and regulations governing home medical care for those on relief, feels that the principles therein enunciated made effort to preserve the ethical and vital relationship of physician and patient; which relationship, from the profession's point of view, far outweighs the dollars and cents immediately involved. In the policy thus far outlined, this principle is adhered to and all licensed physicians willing to render medical service on a reduced scale, to be determined by local physicians in conference with local administrators, were asked to participate in this emergency. No approach thus far has been made to have such medical care dispensed on the basis of full or part-time contracts with physicians, which policy, at present, characterises many industrial plants. While the Board urges that vigilant effort should be put forth by the organised profession in every community to uphold not only its ethical and basic traditions, but also a standard of fees compatible with the high calling and responsibilities of the physician, and compensation for professional services should not be reduced in greater percentage than is asked of those who are furnishing other relief measures such as food, clothing and shelter, yet it does not feel that this recommendation, on account of its strong language, "condemnation of the government" and in its present form, should receive the approval of this Association, and it so recommends.

The recommendation of the Board was adopted.

7. "It is recommended that the President's recommendation of changes to be made in the editorial management of the Journal be carefully considered and approved. The Standing Committees and other branches of the President's office, including the President himself, if placed under a cen-

sorship and cut off from the profession, can serve it but badly. The physicians of the State should have the right to decide for themselves whether they like or do not like what their chosen representatives have to say to them."

The Board, in dealing with the President's Message, has already commented, and the Association acted, upon this recommendation.

8. "It is recommended that in its discretion this committee be allowed to mail circular communications of general interest to non-members—(e. g., knowledge of the Committee's work on A. R. A. fee schedules, etc., etc., went only to members. Probably a large part of the relief work was done by non-members. Some of these might have been influenced to cooperate)."

If by non-members are meant licensed physicians of the medical profession within the State, the Board expresses approval of this recommendation.

The Association concurred.

9. "Approval of the Bureaus of the Committee by the Association is recommended.

"Approval of the Committee organisation, its Rules and Regulations, and its objectives and modes of working, as prescribed by the President, is asked for."

The Board hardly feels that a set of by-laws is necessary for the efficient functioning of any of its standing committees, but can see no objection to such committees drawing up such rules and regulations as it may deem fit and proper to promote the work for which it was created.

10. It is recommended that the ordinance providing for the organisation of standing committees (p. 52 of the Constitution) be amended, paragraphs 6 and 7 to read as follows:

"Par. 6. It shall be the duty of the Chairmen of said Committees to give the President such information and reasonable assistance as he may request in the conduct of the business of the Association, since such Committees are considered as, and are hereby expressly declared to be a part of the administrative department of the Association; they shall serve the Association through the executive office of the President, to whose administrative office they properly belong, and under whose orders they shall serve, in the interim between the annual sessions of the Association."

Section 6 of this ordinance now reads as follows:

"It shall be the duty of the Chairmen of said Committees to give the President such information and reasonable assistance as he may request in the conduct of the business of the Association."

The language of this section as now written seems of such breadth, scope and flexibility as to embrace any or all of the changes suggested; the Board, therefore, does not feel justified in recommending that this section of the ordinance be changed.

The Board's recommendation was adopted.

"Par. 7. The expenses of the Committees shall be defrayed by allowances made the Committees by the President, from the fund set apart and appropriated by the administration for the use of the

President in conducting his administrative office, when and if, this is done. Each Committee Chairman shall submit an itemized expense account with the annual report of his Committee, which shall show expenditures made, balance on hand, etc."

The Board, in dealing with the President's Message, has already commented, and the Association acted, upon this recommendation.

The recommendations of the Board on the report of the Committee on Legislation and Medical Economics were adopted as a whole.

2. Mental Hygiene

(Page 30—July Journal)

This report is terse, concise and broadly inclusive; entering a strong plea for a more sympathetic understanding and approach to this important problem on the part of the family physician. The complete report, inclusive of its recommendations, is entitled to the approval of the Association and the Board so recommends.

The Association adopted the recommendation of the Board.

3. Maternal and Infant Welfare

(Page 31—July Journal)

The report submitted by this Committee reflects an unusual degree of enthusiasm and cooperation with the health forces of the State in an earnest effort to improve the unsatisfactory conditions now existing in both obstetrics and midwifery throughout the State. This report points out definite and concrete ways in which county medical societies may materially aid in the furtherance of a sound program now being sponsored by this Committee, in cooperation with county health units and the central office. This report closes with the incorporation of several recommendations bearing on certain changes in the present birth certificate in the case of the still-born. This Board requests a consideration of these by the Bureau of Vital Statistics of the Health Department, with the end in view of so modifying the present form as may seem wise or advisable from a legal point of view.

The Board suggests a careful study of this report by the members and recommends its approval by the Association.

The Association concurred in the views expressed by the Board.

4. Prevention of Cancer

(Page 32—July Journal)

The Board desires to commend the members of this Committee, newly created at our last annual meeting, for the excellent beginning already made. The points therein emphasized as to need for more careful physical examinations by physicians in order to detect the beginnings of malignancy and a more frequent application of the newer forms of radiation therapy cannot be stressed too often nor too forcefully. Attention is also directed to the

need for better diagnostic and treatment facilities which, at present, are woefully lacking in rural areas and to the further need for a better control of the "cancer quack". As to the suggestion made that the larger cities of the State endeavour to make some provision for diagnostic facilities for cases of malignancy, the Board feels that this is a matter to be worked out by the profession in each city in cooperation with the municipal authorities, and so recommends. The attention of the Chairman of this Committee is directed to Section 7 of the ordinance governing standing committees which provides a fund for stationery and stamps for each committee. With the modification just suggested, the Board expresses its approval of this report and urges a careful reading of it by the entire membership.

The Board's recommendation was adopted.

5. Prevention of Blindness and Deafness

(Page 33—July Journal)

This report manifests a commendable degree of interest and study on the part of this Committee and clearly points out some of the defects and shortcomings of the present methods employed in dealing with this particular group of the State's dependents. The present laws governing the operation of the Alabama Institute for Deaf and Blind, enacted some years ago, provide for neither adequate examination by a specialist for the pupil seeking admission to the institution nor for adequate care and treatment by specialists after admission.

In the several recommendations incorporated into this report are to be found valuable suggestions looking to the improvement of both the management of and the service rendered the inmates of this institution, more particularly as it relates to adequate specialistic medical service. The Board is in entire sympathy with the efforts of this committee to have corrected through proper, and if need be, legislative channels, existing defects and recommends that the services of the State Health Officer, the official spokesman of this organization, be enlisted and freely utilised for this purpose.

The recommendation of the Board was adopted.

Resolution Of Dr. R. S. Hill

The following resolution, seeking to amend the Constitution, was introduced by Dr. Hill at the last annual meeting (page 65, August 1933, Journal):

"Whereas, There are nine congressional districts in the State, and,

"Whereas, There are ten Censors composing the Board of Censors, and,

"Whereas, There are four of the nine congressional districts with no representation on the Board of Censors, and,

"Whereas, This constitutes an inequality and injustice in the representation on the Board of Censors which is not warranted at this period of our professional development, and transportation facilities, and,

"Whereas, The Board of Censors is beyond question the most important body in the State organization and should indisputably fairly represent every section of the State; therefore be it

"Resolved, That Article VIII, Section 2 of the Constitution of the Medical Association of the State of Alabama as it relates to the election of Censors be amended by adding that each vacancy occurring henceforth on the Board of Censors shall be filled by the election of a qualified member of the Association from one of the congressional districts that has no representation on the Board, with the single exception of one member from the State at large, who however shall not be at the time of his election from any congressional district with more than one representative on the Board."

At the annual meeting of this Association in 1915, a resolution which had been introduced the year before by Dr. M. B. Cameron, and with similar content as that by Dr. Hill, was rejected by the Association.

At the annual meeting of this Association in 1927, the Morgan County Medical Society presented a resolution having the same content as the one now under consideration. The Association refused to concur in this resolution.

At the annual meeting of this Association in 1931, President Gaines, in his annual message, recommended that such a policy as embraced by this resolution in the selection of membership on the State Board of Censors be adopted. The Association did not concur in this recommendation.

At the risk of burdensome repetition, the Board presents the following reasons why a policy of restricting membership on the State Board of Censors by geographic limitation or political definition should not apply to this body. This Board serves in a triplicate capacity, to-wit:

- (a) As a Board of Censors.
- (b) As a Board of Medical Examiners.
- (c) As a State Committee of Public Health.

When serving in the capacity first enumerated above, viz., as a State Board of Censors, this body receives, analyses and digests all matters pertaining to the general welfare of the Association, such as the messages of its several officers and committees; resolutions of all sorts; the hearing of appeal cases from county societies or from members, as well as all questions of ethics. It is readily seen, therefore, that the jurisdiction here exercised by the Board is clearly limited to its own membership and extends no further. Did the Board's responsibility and authority reach no further, the contention of "inequality and injustice" to membership within the Association might apply. However, when one probes into the duties, the responsibilities and the exactions imposed upon the members of this Board when sitting in the two other capacities mentioned above and serving the entire population of this State, as well as its own limited membership, as a Board of Health and as a Board of Medical Examiners, no such reasoning should be made to apply. Here it is not a question of "inequality and injustice" to its own membership, be it rural or urban; it is solely a question of the selection, from within such membership, of the best material with

which to do the work for which the entire Association is, by law, held responsible. Consequently, it is the fixed opinion of this Board that, so long as this Association is responsible to our people and to the Legislature for the conduct of its health affairs and for the administration and enforcement of the Medical Practice Act, there should be no restrictions placed upon the present constitutional provisions made for selection of membership on this Board.

For these, and other reasons which might be enumerated, the Board feels compelled to decline to recommend the adoption of this resolution.

Dr. E. S. Sledge moved that the recommendation of the Board be adopted, which motion was seconded by Dr. D. F. Talley.

Dr. R. S. Hill offered as a substitute motion, seconded by Dr. C. L. Guice, that the proposed constitutional amendment be adopted.

President Garber declared the question open for discussion, whereupon Dr. R. S. Hill addressed the Association as follows:

Dr. R. S. Hill: It is not my desire, Mr. President, and gentlemen, to detain you with an unnecessarily prolonged discussion of this question. However, my conviction of the fairness and the justness of the proposed change impels me to ask your kind and patient indulgence while I undertake, as briefly as possible, and to the best of my ability, to discuss the merits of the subject.

Two years ago, Dr. Gaines, as President of this Association, recommended that the Board of Censors be composed of one representative from each congressional district. When that recommendation came before the Board of Censors, I stated that it was a fair and just recommendation, and if the Board would endorse it, and the Association passed it, I would immediately resign the position I held on the Board in order that someone from a congressional district not then represented on the Board might be elected to fill the position. If I remember correctly, the Board stood a tie on the resolution—on the recommendation, and the Association did not adopt the recommendation.

Now, gentlemen, the proposed amendment that you have before you seeks to accomplish the purposes Dr. Gaines had in mind. There is nothing partisan, and there can be nothing partisan in it. It must stand or fall on its merits. If it is not fair to the public of this State to have a representative in each congressional district on the Board of Censors to take care of their sanitary interests in that district; if it is not fair and just to the doctors in each congressional district to have a representative, an equitable distribution of the representation on the Board of Censors, then, it is your duty to vote down this amendment. On the other hand, gentlemen, if it is fair and just that the people of this State and the doctors of this State should be fairly and equitably represented on the Board of Censors, then, you must sooner or later vote them that representation, and you should do it today.

Now, what is this Association? It is not simply a social gathering. It is not simply a scientific organization, nor is it simply a social and scientific organization. This Association is the health arm of the State. Alabama is the only State among the sisterhood of states that has transferred her health department to the keeping of the doctors of the State. It remains, however, just as much a department of state as the Educational Department is a department of state; it is just as much a department of the State as the Agricultural Department of the State is a department of state. In these departments the State has set you a precedent of what it thought and what it thinks is fair in the representation in its different departments. That precedent is that the members of the Board of Education shall come from the different congressional districts, that the members of the Board of Agriculture shall come from the different congressional districts. Then, why should we, the Health Department that presides over the health of not just the people of Montgomery County, not just the people of Mobile County, not just the people of Jefferson County, but of the sixty-seven counties,—why then, I repeat, should we deny the different congressional districts of the State fair and just representation on the Board of Censors?

Now, what is a Board of Censors? The Board of Censors, as you probably have many times observed and know so well, is the heart, is the pulsating and driving force of this organization. Its powers are almost unlimited. I will read you from the Red Book something of its powers,—something of the powers of the Board of Censors.

It elects your State Health Officer and you approve it. It has a hold on the county health officers, not in Mobile County, not in Montgomery County, not in Jefferson County alone, but the health officers in every county of this State where there is a health officer. This Board of Censors controls the county health officers in each and every county. There cannot be a health officer in any county without the Board of Censor's approval. Nor can anyone be county health officer without the approval of the Board of Censors. Here, you see, it touches the health and the interest of people in every county of the State. The people gave us our authority and power and certainly it would seem they are entitled to fair representation on the Board of Censors. But what else? The Board of Censors shall have the power to recommend the removal of the State Health Officer. I hadn't noticed that before.

The Board of Censors acts in three capacities, as has just been stated by its Chairman. When acting as a State Board of Censors to it shall be referred without discussion "all motions, resolutions, or inquiries, of whatever nature, affecting the organization, policy or welfare of the Association, or of any one or more of the county societies in affiliation therewith." Mind you, not just the county society of Montgomery, of Jefferson, of Mobile County, but all the sixty-seven county societies are under the control of this Board of Censors.

There shall be submitted to it "all proposed amendments to the constitution", etc. I will read

briefly, gentlemen. I will not tarry to read it all. "There must be submitted to it the message of the President, all reports and recommendations of the Vice-Presidents, all reports and recommendations of the Secretary and Treasurer, Publishing Committee",—all those must be submitted to the Board of Censors. "There must be submitted to it all questions involving the principles of ethics to which the Association has declared its allegiance." The Board of Censors controls all principles of ethics of the profession throughout Alabama. "There must be referred to it all charges of malfeasance preferred against any officer of the Association; all charges preferred against any officer, counsellor, delegate, or member of the Association," and so forth; "all appeals from the decision or verdict of any county society in affiliation with the Association."

Now, you understand, gentlemen, I am not criticising the fact that this great power belongs to the Board of Censors. I am one who believes that the Board of Censors should possess this power, but I believe any Board that possesses this power should represent fairly the people over which it exercises the power. I contend the Board of Censors does not fairly and justly represent the doctors of this State and the people of this State in the sixty-seven counties, when a majority of that Board is in the hands of three counties.

"All other questions germane to those enumerated above, may, upon a majority vote, either with or without discussion, be referred to the Board of Censors." Then it goes on with that. The Board can subpoena any man to come before it. It can spend your funds in the performance of its duties.

When acting as a State Board of Medical Examiners, "all decisions of the Board in regard to the qualifications of an applicant shall be final and not subject to modification or reversal by the Association,"—a final action on the applicant for license from which there is no appeal—a license to practice in any of the sixty-seven counties.

When acting as the State Committee of Public Health, the Board of Censors supervises and directs the administration of the public health and quarantine laws of the State. Supervises and directs the administration of the public health and quarantine laws where? In the sixty-seven counties of the State. Not just the three counties now controlling the Board. But, I will not detain you further with that.

Now, gentlemen, I submit to you, in all fairness, that a board with such a power as this Board has should represent the whole profession of the State, and I submit to you when a majority of that Board is in the hands of three counties of this State, it does not represent the whole profession of the State.

But, you may say, it has been in operation through these many, many years, and we have gone forward. Times have changed. Conditions have changed, and we must change with them. For many years the Health Department of the State practically existed only in name. Not until the World War aroused the interest of the people in health matters to a degree that induced the Legis-

lature to give the Health Department money enough with which to function was this great machine that Cochran and Sanders built able to turn its wheels. It existed in practical idleness until after the World War when money came in and it began to function as it was designed to do. You know that is true.

And what else? In those early days, the transportation facilities in the State were so bad that it would have taken a man from North Alabama three days to go to Montgomery and attend a Board meeting. The time was when the lawyers in Birmingham employed law firms in Montgomery to represent them before the Supreme Court because of the difficulty in transportation. But that difficulty does not exist today; that condition doesn't exist today.

Until four years ago, the members of the Board of Censors were compelled to defray their own expenses, and you older members of the Board know that is true. You defrayed your own expenses attending meetings of the Board of Censors. It was too much, I submit to you, to elect a man a member of the Board of Censors who lived remotely from Montgomery, and expect him to give three or four days of his time getting to Montgomery to a meeting, and pay his expenses in addition to the loss sustained by being away from work. I repeat, this was too much to expect of any doctor and it was, therefore, expedient to have men elected to the Board who could best and with least expense attend meetings in Montgomery. But today good roads and automobiles make it possible for a man from high Jackson to go to Montgomery and get back home the same day. And, four years ago, at my suggestion as Acting Chairman of the Board, an opinion was gotten from the Attorney General of the State that warranted the Department's paying the expenses of members of the Board in attending meetings of the same. And so, I say that conditions that existed in years gone by, and that made it expedient that the Board of Censors should be composed of men who could reach Montgomery easily, do not exist today,—do not exist today.

Now, gentlemen, are the doctors in the remote parts of this State entitled to representation on a board that has such a power as this Board? Are they entitled to representation? Representation, gentlemen, is a deep-seated impulse in the hearts of men. The first constitutional convention of this country labored not for days, but weeks and into months, trying to solve the problem of just and fair representation. Yes, if recorded history speaks the truth, the question of representation came very near destroying that convention and making impossible the formation of this government. The little states said if you give them representation in proportion to the population that the great states could take advantage of them. The great states said if you give them representation on an equal basis, the little states could combine and take advantage of them. And there they struggled through the many weeks and into months for a basis of fair representation. And just when it seemed—just when it seemed that that convention would break up and there would be no United States of America, the delegation from Vermont or

Connecticut, I forget which, brought in the solution, the solution being two senators from each state, and the representatives in the lower house according to population, thus preventing the possibility of the big states taking advantage of the little states, or the little states combining against the big states. I repeat, fair and just representation is born in the breasts of man.

It has not been so many years ago, if I remember correctly, that Jefferson County fought, as she should have fought, year after year, demanding just representation in delegates to this Association, and she failed to be silenced until she got her just representation. Not until Jefferson County got seven delegates, Montgomery four, based on representation in the Legislature, and Mobile either four or five, did that fight stop. The fight for fair and just representation on the Board, according to the report of the Chairman of the Board of Censors just read, has been going on several years. I warn you it will as it should continue to go on until just representation is given to the rural counties of this State.

It would be a grand, an inspiring sight to see Jefferson County, Mobile County, Montgomery County, take the lead in this fight and say, yes, you rural districts are entitled to fair and just representation and you shall have it. Let us do unto others as we would have others do unto us. Will Jefferson, will Montgomery, will Mobile take the lead in this fight?

What can be argued? The Chairman of the Board of Censors referred to many men of qualification on this Board and said it was necessary to be free to get good men for members. That was a touchy subject. I expected to pass it over; I did not believe anyone would dare bring that thought forward, except maybe in a whisper. I did not believe anyone in an open forum would dare suggest that any one of the nine congressional districts could not furnish men qualified for a position on the Board of Censors. (Applause.) No, sir, I did not believe it would come out as it has, but as it has come out, I take advantage of the opportunity to comment on it. I say to you there isn't a congressional district in this State that can't furnish men for the Board of Censors. Tell me not that Anniston, Gadsden, Florence, Sheffield, Decatur, Troy, Andalusia, and dozens of other little towns I know of haven't got capacity enough to supply members to the Board of Censors. I will not believe it. It is not true.

Now, what are we going to do? What is Montgomery, Mobile and Jefferson County going to do? Are we going to take the lead in giving this just representation? Will we do it? We shall see what we shall see.

I thank you. (Applause.)

Discussion of the question was continued by Dr. E. S. Sledge as follows:

Dr. Sledge: Since it was I who moved that the recommendation of the Board be adopted, I should like to be heard for a few minutes. First, I should like to make the statement that each act of the

Board is subject to approval or revocation by this Association. Is that not true, Dr. Partlow?

Chairman Partlow: That is true.

Dr. Sledge: Its action in nothing is final. Furthermore, I should like to bring to your attention the fact that representation in the Association is on this floor. It is, as nearly as it is possible to get it, representative of the doctors throughout the State. Every act of the Board of Censors is subject to review, acceptance or declination by you.

We have to recognize further that the principal function of the Board of Censors is a deliberative body, to go into details that the rest of us do not have access to. It is their function to study carefully all proposals affecting the welfare of the Association, whereupon recommendations are made, which recommendations may be adopted or declined, as I have said, by you counsellors and delegates representing the entire profession. Every town in the State is properly represented in this body.

We listen with a great deal of respect to anything Dr. Hill has to say, since he served on the Board with great distinction for many years, and is familiar with the inner workings of every department of the Association. But we must concede the same thing to the Board of Censors. These gentlemen have given this matter just as careful consideration as Dr. Hill has. When it comes to a question of representation, I believe most of us have to accept the views of the majority, when it is sufficiently large.

May I ask if the recommendation of the Board was unanimous?

Chairman Partlow: It was unanimous.

Dr. Sledge: Gentlemen, I believe you will conclude that the counties are fairly and equally represented. Ten men whom you have chosen to pass on the matter express such opinion to you.

Discussion was closed by Dr. Hill.

Dr. R. S. Hill: I am ready to concede to Dr. Sledge—I am ready to concede to Dr. Sledge that the Board is thoroughly honest and tries to do its duty, and that the Board makes its report to this Association, but from practical experience, I am sure the members of this Association know that the Board's report is adopted without serious study on the part of the members of the Association. As a matter of fact, it is impossible for the members to give the report careful study.

I am simply contending that this Board shall be representative of each congressional district, that with a member from each congressional district the Board will know conditions throughout the State better than as now composed.

Now, I think it was bad taste in Dr. Sledge asking Chairman Partlow whether the Board was unanimous in its recommendation and the reply from the Chairman that it was. I must submit to you that that was bad taste, and I regret it as it necessitates my doing something that I do not want to do and that is suggest that as this matter dealt with the Board of Censors, dealt with the men who were on the Board of Censors, that the proper and nice thing for the Board of Censors to have done

would have been to ask that a special board be appointed to pass on the question as it concerned them. (Applause.) Now, I didn't want to make that point, because I felt it was a little indelicate to do so, but Dr. Sledge is responsible for my doing this mean thing to the Board.

I simply contend, gentlemen, that there are capable men in every congressional district in this State, and if there are capable men in every congressional district of this State, the Board of Censors, which is a functioning body of this organization, should be fairly representative of the people and the doctors throughout this State by having one member from each congressional district. That is my contention, and you may defeat it now, but it is coming. Representation is deep-seated in the hearts of men.

The wording of the resolution I proposed was so drawn by me as not to interfere with any man who is now on the Board serving out his constitutional term. It interfered with only one man, whose elective term expires with this meeting, being returned to that Board, and I am that one man. If this amendment is adopted today, you could not legally re-elect me to the office which I resigned a few weeks ago. You could re-elect the other member to the Board whose elective term expires today. I would not be subject to re-election as a representative at large, as would he, because I come from a town that has three members on the Board. So, that amendment only affected me and didn't at this time affect any other member of the Board.

Gentlemen, you may vote this down now, but like Banquo's ghost, it will come again and again to disturb your conscience.

I thank you. (Applause.)

President Garber asked that Dr. Hill's substitute motion be read; whereupon, the Association, voting on adoption of the substitute, recorded itself as follows:

In favor of adoption: Counsellors Alison, Bailey, Brothers, Cameron, Chenault, Guice, Harris, Heflin (Wyatt), Hill, Hayes (J. P.), Nolen, Redden, Shaddix, Wilkinson, Williams, Wood; Delegates Bragg of Coffee, Bragg of Morgan, Colquitt, Cotlin, Crawford, Culpepper, Daves, Hamner, Hill (R. Lee), Killian, Lacey, Lawrence, Mitchell, Roberts, Salter, Stubbs, White, Williams, Woodruff—Total 35.

Against adoption: Counsellors Ashcraft, Baker, Caldwell, Cannon, Cowles, Cunningham, Dabney, Davie, Dowling, Garber, Gordon, Hatchett, Heacock, Hough, Howell, Jordan, Kirkpatrick, Leach, Lester, Long, Lull, Lupton, Martin, Mason (E. M.), Mason (J. M.), Mayer, McAdory, McLester, Moore, Moxley, Noland, Partlow, Perdue, Ralls, Ray, Rucker, Sankey, Searcy (G. H.), Searcy (H. B.), Shropshire, Sims, Sledge, Talley, Waldrop, Walker, Walsh, Ward, Williamson, Wright; Delegates Auston, Boyd, Britt, Busby, Carter, Chapman of Dallas, Dowling, Eskew, Ford of Jefferson, Gilder, Glaze, Graham, Grayson, Grote, Kay, Kesmodel, King, Maxwell, McCown, Neal, Nichols, Pool, Smith of Dale, Stephens of Winston, Sum-

ner, Thomas, Waldrop, Wilkerson, Wilson of Franklin—Total 78.

The substitute motion being lost, the vote then reverted to the motion of Dr. Sledge, that the recommendation of the Board be adopted, which motion prevailed.

A Resolution

Introduced by Dr. J. N. Baker

Whereas, Through the interest and generosity of the Scientific Directors of the Rockefeller Foundation, exhaustive studies in soil pollution conducted by the health department at Andalusia, Covington County, Alabama, and extended over a period of five years and with considerable financial outlay, were made possible; and,

Whereas, The practical application to public health problems of the established scientific facts growing out of such study will prove of inestimable value not only to Alabama but also to other states of the Union and to every nation, therefore be it

Resolved, That the appreciation and thanks of this Association, the duly constituted State Board of Health of Alabama, be extended to the Officers and Scientific Directors of the Rockefeller Foundation for making possible the prosecution of this valuable study through Alabama's Health Department.

The Board not only endorses this resolution but requests its Secretary to send a copy to the Officers and Scientific Directors of the Rockefeller Foundation.

The Association concurred.

A Resolution

Introduced by Dr. Seale Harris

(See page 35—July Journal)

The Board expresses approval of this recommendation and further suggests to the editorial staff of the Journal that it have it appear in the Journal together with suitable editorial comment, directing attention of the members to its importance, and also to the feasibility of attempting to give it suitable publicity in the local press.

Approval of the recommendation was given by the Association.

Proposed Constitutional Amendments

Introduced by Dr. D. L. Wilkinson

(See page 35—July Journal)

Inasmuch as this communication seeks to amend the Constitution of this Association it will have to lie over for one year, and the Board so recommends.

A Request

Filed by Dr. James R. Garber

(See page 35—July Journal)

The Board, in appreciation of the enormous and exceptionally large amount of labour given by the present President to the duties of this office, recommends that this Association approve the request for payment of \$25.00 for the clerical help provided by the President in the discharge of his official duties.

The recommendation of the Board was adopted, as was all of Part I, presentation of which had been completed.

The Chairman next submitted Part II of the Board's report, dealing with its activities as a Board of Medical Examiners.

Upon motion and according to custom, this part of the report was accepted without being read.

PART II

REPORT OF THE BOARD OF CENSORS AS A BOARD OF MEDICAL EXAMINERS

EXAMINATIONS HELD JULY 1933 AND JANUARY 1934

Number examined.....	20
Number of certificates granted	19
Number of pro forma certificates granted.....	35
(a) By reciprocity with other states.....	31
(b) From National Board of Medical Examiners	4

EXAMINATION HELD JULY 11 TO JULY 14, 1933

Number examined	10
Number granted certificates.....	10

EXAMINATION HELD JANUARY 9 TO JANUARY 12, 1934

Number examined	10
Number granted certificates	9

APPLICANTS GRANTED CERTIFICATES IN JULY 1933

Barranco, Anthony Joseph	Monsky, David Brockman
Campbell, Samuel Joseph	Newman, John Henry
Clement, John Berton	Nungester, Garrold Henry
Farish, Clarence Gladin	Putnam, George Hamlin
Long, William Matthews	Woods, Thomas Baxter, Jr.

APPLICANTS GRANTED CERTIFICATES IN JANUARY 1934

Greene, Gilbert Bamford	Nix, Harold George
Harper, Henry Young	Sellers, William Thomas
McLeod, Coleman Douglas	Watt, Edward Clements
Mershon, Ronald Burdette	Williams, Sidney James
Morton, Benjamin	

RECIPROCITY APPLICANTS RECEIVED
APRIL 1933-APRIL 1934

Abrams, Maurice James—Md.	June 5, '33
Boudreau, Floyd Thomas, Jr.—La.	June 19, '33
Camp, Joseph Spiegel—La.	May 25, '33
Crutcher, John Sims, Jr.—Tenn.	Jan. 15, '34
Draper, Sylvester Amos—Va.	Sept. 22, '33
Eggleston, John Randolph—Va.	May 25, '33
Farrior, James Harvey—Ind.	Jan. 29, '34
Finlay, Andrew Grant—Col.	Sept. 22, '33
Glazer, Harry—La.	Jan. 20, '34
Hamnett, Harold—Ill.	Apr. 16, '34
Hicks, Leonard Jerry—Tenn.	July 10, '33
Holness, Lenward L.—NBME	Aug. 30, '33
Huey, Thomas Ford, Jr.—Tenn.	July 13, '33
Johnson, Gayle Thompson—La.	Feb. 26, '34
McClellan, Joseph Edward—Tenn.	July 10, '33
McLester, James B.—NBME	Oct. 4, '33
McWhorter, Myrtus Ray—Ga.	June 23, '33
Mitchell, Tom Hall—Va.	Aug. 19, '33
Oden, Georgia E.—NBME	Dec. 8, '33
Pickell, Frank W., Jr.—La.	May 6, '33
Reinhardt, Henry G. W.—Ill.	Apr. 16, '34
Sayles, William Jackson—Iowa	May 18, '33
Sheppard, John Thomas—Tenn.	July 24, '33
Sherer, Raymond Johnson—Tenn.	Jan. 23, '34
Smothers, Charles Washington—Tenn.	Aug. 4, '33
Sturkie, Samuel Doswald—Ga.	Jan. 2, '34
Terry, Benjamin—Tenn.	Jan. 15, '34
Thomas, Clarence Simpson—Md.	May 11, '33
Till, Jacob Rell, Jr.—La.	July 10, '33
Trapp, Walter Russell—Miss.	June 1, '33
Turberville, Joe Ivey—Va.	July 10, '33
Whitfield, Bryan Watkins—La.	Sept. 14, '33
Wiley, James Boyce—Tenn.	Jan. 8, '34
Williams, Gerald Nelson—N. B. M. E.	Aug. 2, '33
Wood, Neal Naramore—Mich.	July 10, '33

PART III

REPORT OF THE BOARD OF CENSORS AS A
COMMITTEE OF PUBLIC HEALTH

Chairman Partlow: This part of the report will be presented by the State Health Officer, Dr. J. N. Baker.

Dr. Baker: Mr. Chairman, and members of the Association, first I wish to express, as your official agent, my sincere thanks to the president, the various other officers and the committee chairmen and their members for the splendid and outstanding work that you have done throughout the entire year. I have been a member, a working member, of this organization for a number of years, and I have never seen the activity and the interest displayed by the various committees that have been displayed during this present year, and at this meeting. I trust that this interest and activity which you have so well launched upon will be continued.

In this connection may I again remind you of what the Board iterated and reiterated in its message, and that is the indivisible oneness of the

medical profession in this State and its health system. Remember your State Health Officer is but your articulate voice and spokesman of the things for which you are held responsible; namely, the control of medical licensure, which is a very important responsibility, and the direct control of all public health affairs in this State. That is a real responsibility. This Association has never flinched in meeting that responsibility; but the only way in the world that this responsibility can be efficiently and properly discharged is a recognition on your part of the necessity of standing squarely behind your official spokesman and agent and aiding and upholding him in every possible way in the discharge of his manifold duties. Please remember this. Carry it into your county medical societies. Take an active interest in all the civic phases of life in your several communities and let the people know that in so far, at least, as health and community welfare are concerned their interests are your interests.

To me, as State Health Officer, it is most gratifying, when difficulties arise in any county in this State regarding any phase of our health activities, that, with one voice, the medical profession, as a rule, rises to defend and protect its health work. That is a most splendid spirit, and I wish to state that as your official agent, making contacts with the various activities of State and Federal governments, it is solely my desire to do this in a way which will be acceptable to the organized profession at large, and to defend both your interests, as well as the interests of the public, whose interests are, by law, likewise yours.

One important duty of the health officer to the medical profession is to stimulate and foster this attitude of mind on the part of all its members. Much of the misunderstanding, much of the friction and most of the unkindly comment on the part of the individual physician is readily traceable to a lack of a full understanding of the objective sought in any given public health program, as well as the failure on the part of the health officer properly to acquaint and prepare the medical profession for its kindly reception.

It must ever be borne in mind that it is neither wise, nor rarely is it justifiable, to attempt to push forward too rapidly a novel public health activity in the face of crystallized medical opposition; a little patience; a little waiting; a little explaining, and all will be righted.

As is known to most of you, your health department during the past one and one half years has experienced anything but smooth sledding. I feel that the vicissitudes through which Alabama's health department has passed should rather be viewed in the light of a general distressing economic upheaval in all governmental affairs than in a desire on the part of our legislature to wilfully inflict a grievous blow. However, I do feel that between now and the convening of the 1935 legislature every interested member of this organization should make a point of first informing himself as to both the activities and needs of this department to our people, and after having done so, to convey this information in simple, understandable, language to their legislators. It

shall be my purpose, after the personnel of this legislature has been definitely established, both through our State Journal, and through communications to the physicians of the State, to bring to their attention our most urgent needs. This done, I feel that I, as your State Health Officer, may confidently rely upon your interest, your loyalty, and your activities in seeing to it that Alabama's health department can again be rebuilt to its former enviable position. My report follows:

REPORT OF THE STATE HEALTH OFFICER

J. N. BAKER, M. D.

FOREWORD

The difficulties and vicissitudes attendant upon the dismantling of so useful and large a thing as Alabama's health system need not here be enumerated or dwelt upon by the State Health Officer. Suffice it to say that every effort has been made to preserve as large and as sound a nucleus as possible around which to crystallise the rebuilding program of the future as soon as the State's finances will permit. There is reason to indulge the hope that the darkest period of the storm, both State and National, has passed and once again plans for rehabilitation may move forward at a surer and steadier gait.

For the years immediately ahead the energies and labours of this Association and of the State Health Officer, of necessity, cluster around a program of rebuilding, and of reclaiming lost ground, rather than one of extension into new fields.

That our health machinery is sound and workable and capable of wholesome and even rapid expansion has but recently been shown by the manner in which Alabama made use of the Federal funds allocated to the various states for specific health projects. The scope, magnitude and benefits derived from these activities are briefly set forth later on in this report.

On April 1st all Civil Works Administration projects, as such, were brought to a close. It is contemplated that Federal aid, from this time on will be conducted along broad lines of rehabilitation, more particularly for the rural population in which program the basic things of rural health work, such as sanitation, safe water supplies, and malaria control, should play a conspicuous and necessary part. Already our health department has submitted its plans for the integration and co-ordination of its activities into this comprehensive scheme of rural rehabilitation.

SPECIAL RESEARCH STUDIES IN PUBLIC HEALTH

All foundations interested in the upbuilding and promotion of scientific studies and projects of a public health nature which might lead to a sounder application in technique have found themselves in the same predicament financially as have official agencies; viz., such a shrinkage of revenue as to utterly preclude expansion, and great difficulty in maintaining worth-while projects already existing. Consequently, during the past year it has not been practicable for the health depart-

ment to launch any new studies to be financed by outside agencies. However, it is gratifying to record that the two special projects inaugurated last year—that for rural tuberculosis control and that for typhus fever control—are both still in operation and functioning satisfactorily. On December 31st, 1933, the study in soil pollution, inaugurated five years ago at Andalusia, in Covington County, was brought to a successful close. This experiment throughout its entire life of five years had been financed by the Rockefeller Foundation at a total cost of \$60,549.50. It is safe to state that this work represents the most exhaustive and prolonged study in soil pollution by human excreta which has ever been undertaken and that, when the mass of scientific data accumulated has been properly analysed, will constitute both an outstanding and authoritative contribution to this important subject. The State Health Officer feels that through this Association, which constitutes the State Board of Health, the appreciation of the people of Alabama should be extended to the Rockefeller Foundation for making this study possible.

COUNTY ORGANISATION

A year ago counties with full-time health service numbered 52. To-day there are 47. Those which have passed out of the picture temporarily, because of straitened financial circumstances, are Baldwin, Choctaw, Clarke, Coffee and Lowndes. It is anticipated that work will be reinstituted in the majority in the not distant future.

The comparatively low scale of salaries prevailing in many of the 47 counties accounts in large measure for the perpetuation of the service to the people.

The percentage of the population embraced is 82.4. This is 7 per cent less than the greatest number served in 1931.

Through the aid of the Civil Works Administration 55 auxiliary nurses were provided for temporary duty with county health departments during the period February 15-March 29. It is hoped that the project may be continued and expanded after April 1.

Further, through the assistance of the Administration a health and sanitation survey was conducted in 18 of the unorganised counties. The data procured will be of invaluable assistance in stimulating local agencies to appropriate for an organised health service.

FEDERAL PROJECTS SPONSORED BY THE HEALTH DEPARTMENT

Because of the flexibility and efficient set-up of the health machinery of Alabama, the State has been able to co-operate fully with the Federal Government in providing work on worth-while health projects in Alabama as part of the Government's program for re-employment. Five such projects, all of considerable magnitude, were inaugurated as follows: (1) malaria control; (2) community and school sanitation; (3) sealing of abandoned mines; (4) an ecto-parasite survey in these areas; and (5) a rat extermination campaign in twenty-one counties.

The last two projects were aimed at the control of typhus fever, which has shown an alarming increase during the last two years.

The malaria control project was under the general supervision of the Bureau of Sanitation. Through the financial assistance of the United States Public Health Service there were appointed two assistant state supervisors. In addition, there were thirteen district supervisors and fifty-seven county supervisors drawn from the Federal malaria quota of 2,475 men. This supervisory staff had direction of both the malaria control and the sanitation projects. It was estimated that the total length of ditches excavated under this project would be 2,051,590 linear feet, of which 1,387,698 had been dug to March 1, 1934. Total labor cost provided for this, under the Federal malaria quota, was \$332,790, with further provision of a small sum, \$8,000, for expenses in connection therewith.

In addition to the engineering work on malaria control, plans were developed in co-operation with the United States Public Health Service in making a malaria blood index of school children in fourteen counties to serve as a base line for measuring the results of the above projects. Such study should have a tremendous effect in decreasing the malaria incidence of the State. It is rare that in the history of public health work the money can be found for such extensive drainage work, and Alabama is indeed fortunate to have been able to take advantage of this opportunity. It reflects the soundness of the foundation upon which public health work in Alabama is built.

The second Federal project was one of community sanitation. The Federal quota for this work called for 1,513 skilled and unskilled workers and an appropriation of \$218,988 for labor. In connection with this project, there was worked out a State Civil Works Administration project of school sanitation to provide for sanitation needed for an estimated 1,379 rural schools. This supplementary project called for \$154,453 for labor and \$154,448 for materials. The Civil Works Administration furnished the amount needed for the labor and \$53,000 of that required for material. The remaining amount needed for material was provided by the communities in which the schools are located. It was agreed that the school sanitation program should have priority over the community sanitation program and that the latter program would be undertaken only while waiting for the details of the school sanitation program to be worked out when this had been finished.

The effect of the sanitation project upon the health of the people of Alabama is more difficult to measure than in the case of the malaria projects. This is so because there are so many more factors involved in the reduction of diseases and deaths from intestinal conditions. The attempt, therefore, was by no means as complete an approach to the problem as was the case with malaria. There should, however, be a distinct reduction and, what is more important, the work will have a tremendous educational value throughout the State in making the people of each county sanitation-minded. Because of this demonstration it

will be an easier task to carry out similar campaigns or improved sanitation in the future.

The purpose of the project for sealing abandoned coal mines, as a protection to public water supplies, was to so protect the abandoned mines that chemical action will not take place which will result in acid wastes from the abandoned mines entering streams used, or available for use, as sources of public water supply. The Alabama program was part of a Federal project originated and designed to protect public water supplies throughout bituminous coal mining areas of the United States. This project was carried on in eight counties for which there has been allotted a Federal quota of 486 workers. The eight counties were Bibb, Blount, Cullman, Jefferson, Marion, Tuscaloosa, Walker, and Winston. The total labor cost provided was \$65,634 and the material cost \$33,144. This work was under the general direction of an assistant director of mines, with office in Birmingham. Office personnel consisted of one assistant, one chemist, one district supervisor and a clerk.

The ecto-parasite survey was placed under the general supervision of Dr. D. G. Gill, Director of the Bureau of Preventable Disease Control, and provided for the employment of 314 workers in Montgomery, Mobile and Dothan. There was provided a budget of \$30,000 for labor, while the United States Public Health Service provided materials required in the work.

The objective of this program was to trap rats and comb them for fleas, which are then studied for identification and their relationship as carriers of typhus.

The rat extermination campaign was conducted from an appropriation made by the United States Public Health Service of \$225,000 for labor and \$2,100 a month for supervisors, and was under the general direction of Mr. Roy Moore, of the United States Biological Survey. This project was carried out in twenty-one counties of Alabama in which there has been an incidence of typhus fever. The method for the extermination of rats in these counties was by means of poison. The project called for 3,000 workers, plus twenty-one county supervisors.

There were 823 cases of typhus fever in Alabama during the past year with thirty-two deaths, compared with 237 cases and eleven deaths for 1932. The cases have continued to be confined largely to the counties in Southeast Alabama and the work on this project of rat extermination has been confined to these counties. It is hoped that this attack upon typhus will be successful in stopping the further progress of this disease in Alabama. At the same time it is appreciated that there will be required similar campaigns in the future if typhus is to be entirely eliminated from the State.

The Department of Public Health welcomed this exceptional opportunity for bringing into play, on a vast scale, a program incorporating the basic things in public health which are so needed in this State; viz., drainage for malaria control and rural sanitation. This program, at its maximum, employed some 7,000 to 8,000 persons; and, even

though operating for a brief period, there were accomplished results which otherwise, with the limited funds available, would have taken years. It was gratifying, also, to observe the ease and speed with which our existing health machinery was expanded, almost over night, to efficiently care for this unusual load.

AMEBIC DYSENTERY

The Chicago outbreak of amebic dysentery, to which 744 cases from 213 cities with 42 deaths have been attributed, has attracted wide attention to this disease. Previously, although it was recognized that a certain percentage of the population acted as carriers, its presence in epidemic form had not been considered. Further, the experience in Chicago demonstrated that very few technicians were qualified to make a laboratory diagnosis.

With the thought in mind that more and more specimens might be submitted since this outbreak had been widely publicised, a technician was sent to Chicago for several weeks in order to become thoroughly familiar with the technic. Besides utilising her services in routine diagnosis, several large surveys are under way and it is hoped to obtain within a relatively short time some idea of the incidence of amebic dysentery in Alabama.

As a further safeguard, the State Health Officer has directed the attention of health officers, and other responsible agencies in all the larger municipalities within the State, to the possible dangers from cross connections between safe and unsafe water supplies which might exist, with the request that the necessary steps be taken to insure against such contamination.

MIDWIFERY IN ALABAMA

The economic status of the average family in Alabama is still pitifully low and the mothers of one-third of the children born received only midwife service. At the close of 1933 there were 2,115 midwives under supervision by county health departments, and provisional figures indicated that 16,607 births were delivered in these counties by midwives. In the same counties comparable figures for 1932 were 2,141 midwives and 16,106 births attended by midwives. These counties recorded 79% of the births attended by midwives during 1932.

It is therefore seen that the midwife problem in Alabama is still a real and serious one and will remain with us for years to come, and that the only sane approach lies through elevation of existing crude standards and the elimination of the grossly unfit. By law, Boards of Health in each county are charged with the supervision of midwives. In unorganised counties, where no health workers exist, adequate supervision can hardly be expected, because of the time and labor element involved; and yet, the response here, on the part of the physicians, has been most gratifying and co-operative. In organised counties, where systematic effort through health workers may be expected, more rapid progress should be made.

To further the broad program of a better delivery service, two definite things have been under-

taken during the past year. One is the refresher courses in obstetrics sponsored by the Association, and given at various points throughout the State by Dr. J. R. McCord. These lectures have been both well attended and appreciated by our physicians. The second thing done has been the assignment by the State Health Department of a nurse trained in midwifery to aid the several counties in organising and instructing the midwives and classifying the present midwife material. Thanks to the splendid support that has been given this phase of the work by the local physicians, the President of the Association, and the Standing Committee on Maternal and Infant Welfare, already considerable headway has been made in those counties in which the program has been begun. The hope is here expressed that this co-operative method of approach may be continued until every county in the State shows clear and unmistakable improvement of its midwife problems.

BUREAU OF LABORATORIES

Despite the drastic retrenchments in funds and personnel which have occurred during 1933, none of the eight branch laboratories have been closed, but it has been necessary to curtail certain activities. An endeavour has been made in all cases to retain a high standard of work even with a reduced working force. Routine blood counts and urinalyses have been discontinued and until relatively recently the Kahn test alone has been used for the sero-diagnosis of syphilis.

(a) Diagnostic Division: Some idea of the effect of these limitations on the diagnostic division is shown by a comparison of the number of specimens examined in 1932 with those in 1933. The figures are given below.

	Total Specimens	Blood Counts and Urinalyses
1932	258,461	18,400
1933	196,292	1,439

It will be seen that the drop in the total samples was due in part to the cessation of clinical laboratory procedures and in part to the general contraction of medical activities in general.

On November 1, 1932 the Wassermann reaction was discontinued and the Kahn test alone used in the diagnosis of syphilis. This was done because the involved technic of the Wassermann consumed so much time that the branch laboratories, with only one technician, could not handle efficiently the volume of routine specimens. However, when additional workers became available through the Civil Works Administration, the Wassermann was resumed in all parts of the laboratory system.

It is a question what should be done when the services of these Federal employees cease. The importance of accurate laboratory tests in the diagnosis of syphilis has been amply demonstrated. A combination of the Wassermann and Kahn is ideal because one result aids materially in the interpretation of the other. Therefore, it seems inadvisable to discontinue the Wassermann again, but it is impossible to employ it in the branch laboratories if only one technician is available. If more Federal funds are allotted to Alabama, it will be

possible to maintain the service. Otherwise, either the Wassermann must be dropped or at least two of the branch laboratories closed. The latter course would not impair materially the state-wide service and appears to be indicated if State funds are not increased in the immediate future. Also, in view of the fact that replacement of much apparatus is necessary in some of the branches, the discontinuance of some of them should receive consideration.

(b) Vaccine Division: During the calendar year 1933, the Central Laboratory manufactured biological products to supply the entire State, as follows:

Typhoid vaccine: 639,590 cc. (255,836 complete immunisations).

Rabies vaccine: 3,917 complete treatments.

Diphtheria toxoid: 148,080 cc. (110,000 complete immunisations).

Schick toxin: 8,000 cc.

Tuberculin: 250 cc.

Sterile distilled water, salt solution, etc.: 94,780 cc.

Schick control: 1,400 cc.

Silver nitrate: 40,000 ampules.

If these products had been purchased at contract prices, the cost would have been \$100,766.00. Accurate cost records in a State Laboratory of this type are difficult to determine, but it is known that the actual cost of the production of these products by the Vaccine Division was less than \$10,000.00.

By the aid of Civil Works Administration funds it has been possible to build an addition to the Vaccine Laboratory. This will give office, laboratory, filter, ampuling, animal and sterilising rooms, which will be entirely separated from the rest of the laboratory activities. The plans have already been approved by the National Institute of Health and it should be possible to obtain a Federal license for manufacturing rabies and typhoid vaccines, diphtheria toxoid, toxin for the Schick test and tuberculin.

The advantages of such a license would be:

a. Periodical examination of all products by the National Institute of Health, thus insuring greater safety.

b. Strict Federal government supervision of methods, personnel, products and equipment.

c. Constant introduction of new and improved methods.

(c) Research and Investigation: With the reduction in personnel it has been difficult to carry on as large an amount of research as formerly. However, the following subjects have been and are receiving attention:

1. Alum precipitated toxoid (further refinements in production).

2. Typhoid vaccine (the effects of various preservatives).

3. The agglutination tests for typhoid, undulant and typhus fevers.

(d) The Rabies Situation: Statistics which have been compiled from the laboratory records indicate that the incidence of rabies in Alabama

is increasing. There are given below the figures by years for a five-year period of the number of suspicious heads examined and the anti-rabic treatments distributed by the Bureau of Laboratories:

Year	Heads Examined	Treatments Distributed
1929	1,136	1,525
1930	1,105	1,785
1931	1,255	2,667
1932	1,685	3,676
1933	1,631	3,518

It will be seen from these that a very definite increase has taken place during the past two years.

The need of a state law for the control of this disease is evident and undoubtedly should be brought before the next legislature. While the wholesale immunisation of dogs has been criticised, it undoubtedly is the best procedure for state-wide control as is evidenced by the experience of certain other commonwealths. Every effort is being made at present to encourage municipalities to pass ordinances to prevent the further spread of this disease.

BUREAU OF PREVENTABLE DISEASE CONTROL

During 1933 the health record of the State in regard to communicable diseases was as a rule favorable. Each year there are fluctuations in the incidence of diseases, particularly in those without a means of prevention, but the major diseases showed satisfactory records. Typhoid fever reached another new low record, while diphtheria showed a considerable decrease from the preceding year. Extension of the use of toxoid should accelerate this decline. Other states have followed the example of Alabama in adopting the one-dose toxoid as standard and additional reports are corroborating the findings in this State as to its efficiency.

Smallpox set a new low record of incidence, but there still remains a large percentage of the population unvaccinated, so the introduction of infection is all that is necessary to create an epidemic. Malaria increased very sharply during the fall months and will provide an unusually large number of "carriers" for the 1934 season. Extensive projects have been carried out this winter through the co-operation of the Civil Works Administration and these should have a favorable influence.

Typhus fever continued the increase first seen in 1932 and became a serious problem during 1933. The geographic distribution remained the same in that Southeast Alabama is the primary focus, with the disease reaching up into the central counties. The research unit, located at Dothan and maintained by the Rockefeller Foundation and the United States Public Health Service, began work early in the year and accumulated much valuable data. Early this present year this activity was removed to Montgomery in order to utilise more fully the facilities of the State Laboratory.

With the development of the Civil Works program the control of typhus fever was one of the early projects considered and a rat extermination program was approved in some twenty-one coun-

ties. Poison and traps have killed rats in huge numbers and it is hoped that the destruction of infected rodents will have its effect in lessening the spread this year. Many of the infected cities and towns will require permanent rat control programs, however, to combat this disease which is apparently with us to stay.

(a) Tuberculosis: In common with other activities, the diagnostic chest clinics sponsored by the department operated on a lessened basis during the year. Two clinics were maintained until April when both were discontinued. With the new fiscal year beginning in October, one of these clinics was re-established and the department was fortunate in having Dr. R. A. Brown return as clinician. Naturally the volume of work cannot compare with previous years, but this clinic is also serving as a stimulus to the whole question of tuberculosis and has a value beyond actual examinations made.

Number of clinics held—30
Examinations—1324

Negative	875—66.1%
Suspect	128— 9.7%
Positive	316—23.9%
Deferred	5— 0.3%

Some progress has been made in the program of providing for the cases of tuberculosis found. Two counties, Jackson and Morgan, have constructed county sanatoria with the aid of the Civil Works Administration, while Tuscaloosa County has built a preventorium. Several counties have provided the less pretentious Burr type cottage for the isolation of their open cases.

The crying need at present is some financial assistance from the State towards the maintenance of these cases. The surgical treatment of tuberculosis offers the most hopeful advance in recent years and there is a field for more physicians trained in collapse therapy.

(b) Venereal Disease Clinics: The department early in 1933 found itself without any means of furnishing drugs for the treatment of indigent cases and as a result was forced to abandon its extensive treatment program. In a number of cities local arrangements were made to provide clinic service; some of these on a free basis and some on a small fee basis. The local medical society in each instance approved and directed this activity. Arrangements were made in a few counties for the treatment of those cases receiving relief, the Alabama Relief Administration carrying the financial burden. It is hoped that this program may be extended to other counties in the State.

(c) Oral Hygiene: The one dentist who remained with the department at the beginning of 1933 was released in April and the activities on oral hygiene came to an end at that time. The educational efforts extended had resulted in a school dental program in most of the counties of the State and this program has been carried on in a limited way by the dental forces of many of these counties. Some stimulus and assistance is needed from a central force however.

BUREAU OF VITAL STATISTICS

The work of the Bureau of Vital Statistics is recognised as being necessary to the efficient administration of public health. Its responsibilities, however, are greater than the mere collection of sanitary records. The records represent legal and social papers of real importance to the citizens of the State. The responsibility of the State Department of Health in securing complete registration of every birth and every death in the State is a grave one. While for the past ten years this completeness has been sufficient to secure recognition of our vital statistics by the Federal Government, the Bureau has evidence daily of deficient registration.

During the past year, the Bureau has conducted several surveys and studies which indicate that the registration of births, particularly, is grossly deficient. In many counties not more than three out of every four births are reported. This means that one-fourth of the children born in these counties are deprived of legal records establishing the facts of their birth.

The State Health Officer views these facts with concern and urges a more aggressive campaign for complete registration in Alabama. Every practitioner of medicine who attends a birth should feel the moral and legal responsibility for making complete, accurate and prompt reports. The law provides that these reports shall be made within ten days of the birth and it is the belief of the Bureau that if physicians would report more promptly, the deficiencies would be fewer. It is felt that the responsibility of the health department of seeking a record of every birth and every death in Alabama is of such grave importance that the law should be enforced without prejudice throughout the State, reporting to the proper enforcing bodies from time to time the failure of physicians, midwives or others in discharging a legal requirement.

The work of the Bureau in general has been kept up to a high standard. Loss in personnel necessitated by the restricted budget during the past year has been made up largely through securing extra assistance through relief and Civil Works Administration projects. The following table sets forth some figures on the use of our records for legal and social purposes:

	1932	1933
Certified copies issued	3,747	2,308
Birth records for employment purposes	947	1,763
Copies of birth records, mainly for school purposes, etc., and other miscellaneous searches	7,029	7,527
Birth registration notices sent to parents	55,719	49,507
Corrections to records	4 880	5,307

There is need of more intensive field work in the promoting of registration throughout the State which should be considered as soon as the financial conditions of the State Department of Health permits of expansion. Such field work should eliminate, to a very great extent, the need of recourse

to legal measures in order to secure enforcement of our registration laws.

In the development of vital statistics registration throughout the United States during the past few years, registration officials have come to appreciate the need of more definite provisions for the registration of births prior to the establishment of vital statistics reporting and where such records were not made at the time the births took place. Several states have modified this law relating to registration of stillbirths so that only one certificate would be required. There seems no reason why Alabama should not do likewise. The financial condition of many of the counties makes it necessary that consideration be given to some means for assuring the remuneration of our local registrars. The time seems to be opportune for consideration of more centralized registration of marriages and divorces in Alabama. The Bureau is giving attention to all of these problems and should work out during the coming year legislation that will put the registration of vital statistics in Alabama on a basis second to none in the country.

DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING

On January 1, 1933, when a Bureau of Child Hygiene and Public Health Nursing constituted a part of the organization, the personnel consisted of a director, an assistant director, two field assistants (one of whom was on leave of absence for study) and a secretary. At this time two chest clinics were in the field, one nurse traveling with each.

On April 15, 1933, the Bureau was closed for lack of funds. One field assistant remained attached to the Bureau of Preventable Disease Control. On July 1, 1933 the field assistant was given a leave of absence and there was no nursing service until August 15th. At that time the field assistant who had been on a year's leave for study returned and began work on a special program which is being financed through extra-state funds.

At the beginning of the fiscal year, October 1, 1933, a division of public health nursing was established with a staff of three. Secretarial assistance was provided by the Bureau of Administration until December 14th, when the service of a secretary was made available through the Civil Works Administration.

January 1, 1933, 89 public health nurses were employed in the organized counties of Alabama. The distribution was: Birmingham and Jefferson County 2 directors, 26 staff nurses; Montgomery County 7 staff nurses; Lee 3; Dallas 2; Madison 2; other organized counties 1 each. On December 31, 1933, the total number of county and city nurses employed was 86. Three nurses were lost during the year because of the discontinuance of county units.

(a) Nursing Activities: The State advisory service rendered by this division was greatly limited by the necessary recess of activities. During the year 105 advisory visits were made to the organized counties. The purpose of such visits was to assist in planning the nursing program; to

stimulate greater understanding and appreciation of records, and to discuss other problems indicated.

The control of midwifery in Alabama remains unsatisfactory. By law the Board of Health of each county is charged with the supervision of midwifery. Only in counties with an organized health unit can there be a constructive program of midwife control. Even here, however, the situation is not good, there being only in a few counties any attempt at restriction of the actual work done by the midwives. In 1933 five of the organized counties reported no midwives under supervision. In 1933, in these five counties, there were registered 981 births delivered by midwives. Ignoring the presence of midwives will not remedy the evils of the practice. We cannot get away from the fact that there is in some counties in Alabama a social and economic need for the delivery service rendered by midwives.

With a view to securing more facts relating to the practice of midwifery in Alabama and the type of person so employed, the State Department of Health, with the co-operation of the Committee on Maternal and Infant Welfare of the State Medical Association, began a survey of midwives. The survey is being made in both the organized and unorganized counties and is under the supervision of a member of the division of nursing, who has had special study and experience at the Lobenstein School of Midwifery in New York. This survey includes a personal data sheet on each person other than a doctor delivering during 1933 and all those registered as midwives with the County Boards of Health in the State. It is under way in 46 counties and completed in 4. The personal data sheet is filled out by the health officer or county nurse in the counties with a health unit and by the local registrar in the counties without a health unit. These data sheets are sent to the director of the survey and a letter signed by the State Health Officer is sent to the two physicians whose names are given on each midwife personal data sheet to get information from the physicians on the midwives in their community.

After the fact finding survey is completed a program of regulations and control will be suggested for each county as follows:

1. Registration of all persons practising midwifery other than physicians.
2. Qualifications for new applicants will be:
 - a. Ability to read instructions suggested by the Board of Health.
 - b. Ability to write well enough to make out a birth certificate correctly.
 - c. Physical fitness to do all things required of one taking care of mother and infant.
 - d. Freedom from communicable disease and to be over 21 years of age and under 65 years of age.
 - e. Recommendation by a physician as to ability and skill and community need for midwife service.
3. Gradual elimination of present midwives not meeting present qualifications.
4. Closer supervision of midwives registered.

The necessary contacts were made with the county medical societies and individual doctors for the promotion of chest clinics in 3 counties without health units.

The services of one field adviser was given for two days on disaster relief following a cyclone in North Alabama.

(b) Prenatal Care: A program of prenatal care continued a major interest, but with only two counties having more than one nurse the service is most inadequate. During the last year the county nurse has had the supervision of at least 100 prenatal cases as a goal. In counties where group supervision has been possible the number has been greater.

The adopted policy of midwife instruction with a system of annual permits to practice midwifery has been continued.

Analysis of births by attendants for 1932 shows the following variation in the frequency of deliveries by midwives: Only 1.2% of white live births in cities of 10,000 and over were delivered by midwives. 18.2% of white live births in rural Alabama were delivered by midwives. 84.7% of negro live births in rural Alabama were delivered by midwives. For the State as a whole 10.6% of white stillbirths were delivered by midwives. 67.3% of negro stillbirths were delivered by midwives.

(c) Infant Hygiene: With an increased interest last year in infant supervision a standard was set for 1933; the supervision for the first year of all infants whose mothers had been given prenatal instruction; the immunisation of these infants against diphtheria and smallpox. With the use of the one dose of toxoid this has been less difficult to attain.

(d) Preschool Hygiene: Summer roundups have stimulated the interest in this group. A few counties have exceeded their goal—at least as many infants and preschool children immunised against diphtheria as there were births in the county.

(e) School Hygiene: The program of physical examination was adapted to conditions in the county. Early closing of schools limited this activity in many rural districts.

(f) Health Education: The county units have been encouraged to use all opportunities to meet groups for educational purposes. This has not only served to better acquaint the public with health work but has made it possible for one person to render a particular service to a greater number.

Classes have been conducted or talks given by members of the State and county nursing staffs to medical students of the University of Alabama and to the student nurses of hospitals.

One member of the State staff, while on leave without pay, attended the International Congress of Nurses in Paris. Members of the State and county staffs attended the State Nurses Association.

BUREAU OF SANITATION

The activities of the Bureau are dealt with under two divisions: the Division of Engineering and the Division of Inspection. The principal activities

of the former are dealt with under public and semi-public water supplies, sewerage, sanitation, malaria control, and typhus fever. Those of the latter are dealt with under milk control, oyster control, food-handling, bottling plants and hotels.

Division of Engineering

Water Supplies: During the year 111 inspections were made of 97 water plants. 160 plants were not visited during the entire year because of curtailment of funds and personnel.

There has been a steady improvement in public supplies throughout the State.

Beginning in July, applications of various communities were being made to the Public Works Administration for loans to build, improve, or extend water plants. By the end of the year fifty-four such applications had been filed with and approved by the Department of Health.

Sewerage: Plans were received, checked and finally approved for construction of sewer systems in Sulligent, Guin, Hollywood, and Shades Valley.

Other systems were started in Eutaw, Greensboro and Fairfax under Civil Works Administration programs.

Twenty-two applications for Public Works Administration funds for the construction of sewerage systems or sewage treatment plants were filed with the Bureau for project approval. All these were given tentative approval letters.

Sanitation: Sanitation work during 1933 was carried on in sixteen counties. 1,468 new type pit privies were built; 471 existing old type pit privies were rebuilt; and 159 sewer connections made.

Malaria Control: 91 dwellings were mosquito proofed. 538 projects were surveyed for drainage and 280 miles of new ditches dug. Maximum area in acres controlled by larvicides was 81.

Typhus Control: During the period September 1—November 20, rat trapping programs were inaugurated in 4 towns. When the Civil Works Administration program began in Alabama on November 20, many towns applied for and secured approval for trapping programs as local projects. The work continued in this way until the latter part of December when a more extensive plan was put in operation under direction of the Bureau of Preventable Disease Control, with the United States Biological Survey co-operating.

Miscellaneous: Mine Closing—To protect water supplies from mine acid wastes openings of abandoned mines were sealed through the aid of the Civil Works Administration. Openings closed totaled 2,927.

Division of Inspection

Milk Control Results: As a result of the loss of sanitary officers by a number of the county health departments, all local milk control activities devolved upon the health officer, who in many cases was unprepared or unable because of other demands upon his time to carry on this activity with any degree of regularity. The consequence of this lapse in local control, together with the greater infrequency with which district inspectors of this Division were able to visit dairies, aggravated by general economic conditions, and the

unrest resulting from publicity given to marketing agreements by the Agricultural Adjustment Administration, was an inevitable let down in milk quality and sanitary standards. Conditions are gradually being restored to normal, but it will be some months before conditions are as nearly ideal as they were during the summer of 1932.

Oyster Control: The inability to maintain a resident inspector on the coast to enforce the Shellfish Regulations necessitated the making of inspections by the Director of the Division. An average of one trip to the coast every month from September to March was made, and a fair degree of compliance with the regulations was obtained before certificates were issued at the beginning of the season. It became necessary to revoke the certificates of only two shippers during the season.

The taking of regular water samples in one of the areas brought to light the fact that these waters are receiving fecal pollution, and a program is now under way whereby, through Civil Works Administration labor and local provision of materials, this water-shed can be sanitated.

Special Activities: The Director of the Division was selected by the dairymen of the State to serve as secretary of their movement to conform to the requirements necessary to obtain the execution of marketing agreements with the Secretary of Agriculture. The Director of the Division was rather fully occupied in this activity for a period of eight weeks, but before agreements could be executed, the policy of the Agricultural Adjustment Administration was altered in a manner making the execution of agreements for localities in this State impracticable.

For the past three months, the Division has had the assistance of two typists, provided by the Civil Works Administration, in the preparation for publication of a compilation of all the public health laws, related statutes, and State Board of Health rules and regulations, which it is expected will be completed shortly.

On motion, duly seconded, the Association ratified as a whole its action on Parts I, II, and III of the report of the Board.

In concluding the report, Dr. Partlow spoke to the Association as follows:

Chairman Partlow: And now, Mr. President, after again having the honor of submitting to the Association the annual report of the Board of Censors for the year now ending, may I ask your indulgence and that of the members for a moment in order that I may make a statement to the Association?

In the step I am about to take I am not unmindful of nor ungrateful for the many honors that have been conferred upon me within the long period of my membership in this Association. You have voluntarily conferred upon me from time to time every honor the Association has had to bestow. You have retained me on the Board of Censors, first, by appointment, and then by reelection during a continuous period of more than sixteen

years, and finally the Board of Censors has honored me as its Chairman practically since the death of the lamented Welch. While these numerous distinctions and honors have been conferred freely by you, unsought by me, my service in every station I assure you has been rendered freely, loyally and conscientiously. My associations in each instance have been at the same time pleasant and the fellowship developed incident thereto constitutes a part of my life to which I shall ever look to with a high degree of pleasure and pride. It is, therefore, with considerable feeling that I approach this hour. Many of my friends of the Association, both on and off the Board of Censors, have known for a number of years that for reasons which I have assigned and reiterated here, that I have desired to resign from the Board of Censors. This feeling was fully expressed at the Mobile meeting two years ago, at which time I would not consent for my name to go before the Association for reelection, but in spite of this you again honored me by reelection almost unanimously. In deference to your wishes thus expressed, I accepted and have continued to serve until now as a member of the Board of Censors. I pray you now to consider favorably my resignation as member and Chairman of the Board.

My reasons are two. First, under the prevailing condition of the times, with three large state eleemosynary institutions which have grown through the years, I recognize that I must restrict my efforts and activities to my official duties with these institutions. To be responsible for the welfare of the three institutions, numbering a total of more than five thousand inmates, under the prevailing conditions, in which the State finds itself able to give only a limited support, requires my constant thought and attention. I believe in the principle that to do a large job most efficiently requires restricting one's attention and thought largely to the duties of that one office. And second, the Association has available to its call many members whose loyalty to the principles of our organization is unquestioned, and whose ability and training are superb, upon whom the Association may call for service, and to whom such honors may be well distributed.

Therefore, with gratitude to you for your very generous attitude toward me in the past, but yielding to my feelings and desire to retire to the ranks on account of the reasons I have attempted to give you, I pray your favorable consideration in the acceptance of my resignation to take effect now. I shall look forward with great pleasure to a continuance of my very pleasant associations with you as a member of this body and assure you of my faithful and loyal devotion, not only to the traditions of the past, but to the future welfare and interests of this Association.

President Garber announced that it was with regret he had accepted Dr. Partlow's resignation as a member of the Board, effective at the completion of the presentation of his report as Chairman. The President announced, further, a vacancy on the

Board because of the resignation, the same to be filled by election in due course.

Dr. E. S. Sledge moved that a rising vote of thanks be accorded Dr. Partlow for his many years of splendid self-sacrificing service to the Association. The Association responded *en masse*.

REVISION OF THE ROLLS

The next order of business being the revision of the rolls of the Association, the Secretary was directed by President Garber to proceed without interruption in the absence of objection. As a preface to the revision of the Roll of County Societies, the Secretary said:

"County Medical Societies, to comply with the Constitution, must meet certain obligations. First, an annual report, on forms furnished by the Association, must be filed with the Secretary; second, each society is expected to be represented at the annual meeting by at least one delegate; third, fees must be paid to the Treasurer of the Association for each delegate to which the Society is entitled; and fourth, dues are to be remitted to the Treasurer for each member".

With this foreword, the revision proceeded.

1. Revision of the Roll of County Societies:

(a) County societies which have fulfilled all their constitutional obligations: Autauga, Barbour, Bibb, Blount, Bullock, Butler, Calhoun, Chambers, Chilton, Choctaw, Coffee, Conecuh, Covington, Cullman, Dale, Dallas, DeKalb, Elmore, Etowah, Fayette, Franklin, Geneva, Hale, Henry, Houston, Jackson, Jefferson, Lamar, Lawrence, Lauderdale, Lee, Limestone, Macon, Madison, Marengo, Marion, Marshall, Mobile, Monroe, Montgomery, Morgan, Perry, Pike, Randolph, Shelby, St. Clair, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Washington, Wilcox, Winston—Total 54.

No objection being made as to the correctness of this report, the President directed that these counties be passed as clear of the books.

(b) County societies partially delinquent: Baldwin, representation; Cherokee, delegate dues for one; Clarke, report and delegate dues for one; Clay, delegate dues for one and representation; Cleburne, delegate dues for one; Colbert, representation; Coosa, delegate dues for one; Crenshaw, delegate dues; Escambia, representation; Greene, delegate dues for two; Lowndes, representation; Pickens, representation; Russell, representation—Total 13.

No objection being offered as to the correctness of this report, the President directed that these counties be passed, with an understanding that the Secretary and Treasurer make an effort to remove the delinquencies.

(c) County societies totally delinquent: None.

Thereupon the Secretary said, "In revising the Roll of the College of Counsellors, five lists are prepared, designated respectively: (1) The schedule of counsellors clear on the books in regard to attendance and dues; (2) The schedule of delinquent counsellors—counsellors delinquent in attendance or dues, or against whom charges may be pending; (3) The schedule of miscellaneous counsellors—counsellors who have died since the last annual meeting, or have offered their resignation, or have moved out of the State, or out of their respective congressional districts; (4) the schedule of active counsellors of twenty years' standing; and (5) The schedule of counsellors-elect who have qualified as provided in the Constitution".

With such preface, the revision was continued.

2. Revision of the Roll of Counsellors:

(a) Counsellors clear of the books: Acker, Alison, Ashcraft, Bailey, Beard, Bedsole, Brothers, Burdeshaw, Caldwell, Cannon, Chandler, Chenault, Craddock, Crutcher, Cryer, Dabney, Doughty, Dowling, Dupree, Garber, Gragg, Granger, Greer, Hagood, Hatchett, Hayes, C. P., Hayes, J. P., Heflin, Hendrick, Hill, Hollis, Hough, Howell, Hubbard, Jackson, James, A. D., James, N. G., Leach, Lester, Lightfoot, Long, Lull, Martin, Mason, E. M., Mason, J. M., Mayer, McAdory, McCal', Miller, Moore, Moxley, Newman, Noel, Noland, Nolen, Oswald, Price, Ralls, Redden, Rountree, Rucker, Sankey, Scott, Searcy, G. H., Searcy, H. B., Shaddix, Shropshire, Sledge, Smith, Speir, Tankersley, Taylor, Thomas, Tucker, Waldrop, Walker, Walls, Ward, White, Whitman, Wilkerson, Williams, Williamson, Wright.

In the absence of objection, the President ordered the names of these counsellors, reported as clear of the books, passed.

(b) Delinquent Counsellors: J. S. Tucker, dues.

(c) Miscellaneous Counsellors:

(1) Life Counsellors who have died: Henry Green.

(2) Active Counsellors who have died: G. H. Moore.

(3) Active Counsellors who have moved: None.

- (4) Active Counsellors who have resigned: W. H. Hutchinson, E. L. Kelly, S. C. Meigs.
- (5) Active Counsellors of twenty years standing: T. J. Brothers, H. T. Heflin, H. J. Sankey.
- (6) Counsellors-Elect who have properly qualified: F. L. Abernethy, T. J. Anderson, W. L. Cowles, W. A. Gresham, S. E. Jordan, S. Kirkpatrick, W. A. Lewis, J. A. Martin, L. D. Parker, J. D. Perdue, G. F. Walsh, W. D. Wood.

The President directed that the name of Dr. J. S. Tucker be removed from the roll; that the names of Drs. Henry Green and G. H. Moore be transferred to the Book of the Dead; that the names of Drs. W. H. Hutchinson, E. L. Kelly, and S. C. Meigs be removed from the roll; that the names of Drs. T. J. Brothers, H. T. Heflin, and H. J. Sankey be transferred to the Roll of Life Counsellors; and that the names of Drs. F. L. Abernethy, T. J. Anderson, W. L. Cowles, W. A. Gresham, S. E. Jordan, S. Kirkpatrick, W. A. Lewis, J. A. Martin, L. D. Parker, J. D. Perdue, G. F. Walsh, and W. D. Wood be added to the Roll of Active Counsellors.

3. *Revision of the Roll of Correspondents:*

Drs. J. Shelton Horsley and Russell L. Cecil, Jerome Cochran Lecturers of 1933 and 1934, respectively, were placed on the Roll of Correspondents.

4. *Revision of the Roll of Officers:*

Dr. W. M. Cunningham, Jasper, was elected President; Dr. W. M. Salter, Anniston, Vice-President of the Northeastern Division; and Dr. Douglas L. Cannon, Montgomery, Secretary.

Drs. Lloyd Noland and J. D. Perdue were elected members of the Board of Censors, their terms to be five years. Dr. G. H. Searcy was elected a member of the Board to fill the unexpired term of Dr. W. D. Partlow, resigned.

Committees constitutionally provided to nominate counsellors brought in the following nominations: From the Second District—W. R. Carter; Third—G. R. Smith, C. P. Hayes, and Clarence Long; Fourth—W. M. Salter, J. F. Alison, E. M. Thomas, and M. J. Williams; Fifth—J. A. M. Nolen; Sixth—J. P. Hayes, Sydney Leach, M. H. Eskew, and John Shamblyn; Seventh—E. D. McAdory and G. S. Gilder; Eight—W. H. Greer; Ninth—Stewart Welch.

The Secretary having been instructed to cast the ballot of the Association to fill the vacancies in the College of Counsellors cast it in favor of those nominated above.

Miscellaneous Business

Mobile was chosen as the place of meeting in 1935, Gadsden also having extended an invitation to the Association.

By a rising vote of thanks, the Association expressed to President Garber its appreciation of his able leadership during his incumbency.

On motion made by Dr. R. S. Hill, thanks were extended by the Association to the Jefferson County Medical Society, the press and all other individuals and agencies for courtesies shown during the meeting.

The President for the ensuing year, Dr. W. M. Cunningham, having been presented to the Association and there being no further business, adjournment was declared until the third Tuesday in April 1935.

REGISTRATION AT THE SIXTY-SEVENTH CONSECUTIVE ANNUAL SESSION

Birmingham, April 17-19, 1934

LIFE COUNSELLORS

Baker, J. N., Montgomery
Cameron, M. B., Eutaw
Cunningham, W. M., Jasper
Davie, M. S., Dothan
Faulk, W. M., Tuscaloosa
Givhan, E. G., Montevallo
Gordon, S. A., Marion
Guice, C. L., Gadsden
Harris, Seale, Birmingham

Harper, W. W., Selma
Harrison, W. G., Birmingham
Heacock, J. D., Birmingham
Heflin, Wyatt, Birmingham
Hill, R. S., Montgomery
Howle, J. A., Falkville
Jones, C. C., Birmingham
Lupton, F. A., Birmingham

McLeod, J. C., Bay Minette
McLester, J. S., Birmingham
Partlow, W. D., Tuscaloosa
Ray, J. U., Woodstock
Simms, B. B., Talladega
Talley, D. F., Birmingham
Thigpen, C. A., Montgomery
Turner, J. P., Cropwell
Wilkinson, D. L., Birmingham

ACTIVE COUNSELLORS

Alison, S. B., Minter
Anderson, T. J., Greensboro
Ashcraft, V. L., Reform
Bailey, E. B., Demopolis
Brothers, T. J., Anniston
Burdeshaw, S. L., Headland
Caldwell, E. V., Huntsville
Cannon, D. L., Montgomery
Chenault, F. L., Decatur
Cowles, W. L., Birmingham
Craddock, French H., Sylacauga
Crutcher, J. S., Athens
Cryer, G. A., Anniston
Dabney, M. Y., Birmingham
Doughty, M. E., Slocumb
Dowling, J. D., Birmingham
Dupree, M. W., Athens
Garber, J. R., Birmingham
Gragg, V. J., Clanton
Granger, F. G., Dothan
Greer, W. H., Sheffield
Gresham, W. A., Russellville
Hagood, M. H., Brewton
Hatchett, W. C., Huntsville
Hayes, C. P., Elba

Hayes, J. P., Clanton
Heflin, H. T., Birmingham
Hill, R. L., Winfield
Hough, J. S., Livingston
Howell, W. E., Haleyville
Hubbard, T. B., Montgomery
James, A. D., Choctaw
Jordan, S. E., Highland Home
Kirkpatrick, S., Selma
Leach, Sydney, Tuscaloosa
Lester, B. S., Birmingham
Lewis, W. A., Enterprise
Long, Clarence, Hurtsboro
Lull, Cabot, Birmingham
Martin, J. A., Montgomery
Mason, E. M., Birmingham
Mason, J. M., Birmingham
Mayer, K. A., Lower Peach Tree
McAdory, E. D., Cullman
McCall, D. T., Mobile
Moore, D. S., Birmingham
Moxley, J. B., Brantley
Noel, W. E., Boaz
Noland, Lloyd, Birmingham
Nolen, J. A. M., Alexander City

Parker, L. D., Andalusia
Perdue, J. D., Mobile
Price, A. B., Gordo
Ralls, A. W., Gadsden
Redden, R. H., Sulligent
Rountree, W. S., Birmingham
Rucker, E. W., Jr., Birmingham
Sankey, H. J., Nauvoo
Scott, W. F., Birmingham
Searcy, G. H., Tuscaloosa
Searcy, H. B., Tuscaloosa
Shaddix, M. L., Alabama City
Shropshire, C. W., Birmingham
Sledge, E. S., Mobile
Tankersley, James, Prattville
Taylor, W. R., Town Creek
Waldrop, R. W., Bessemer
Walker, A. A., Birmingham
Walls, J. J., Alexander City
Walsh, G. F., Fairfield
Ward, H. S., Birmingham
Williamson, G. W., Hartford
Williams, M. J., Oxford
Wood, W. D., Camp Hill
Wright, D. H., Berry

DELEGATES

Autauga: J. E. Wilkinson,
Prattville
Barbour: W. S. Britt, Jr., Eu-
faula; J. I. Reid, Clayton
Bibb: C. W. Jones, West
Blocton; W. J. B. Owings,
Brent
Blount: E. T. Brown, Cleve-
land; C. L. Stansberry, On-
eonta
Butler: E. V. Stabler, Green-
ville
Calhoun: W. M. Salter, Annis-
ton, Gerald Woodruff, An-
niston
Chambers: C. S. Cotlin, Jr., La-
Fayette
Cherokee: S. C. Tatum, Cen-
ter
Chilton: C. O. Lawrence,
Clanton; C. N. Parnell,
Maplesville
Choctaw: W. J. Barber, Butler;
H. W. Robinson, Edna
Clebune: F. R. Wood, Heflin
Coffee: E. G. Bragg, Elba; B.
J. Massey, New Brocton
Conecuh: W. R. Carter, Repton
Coosa: J. A. R. Chapman,
Goodwater; J. H. Foster,
Weogufka
Ccvington: F. H. Boyd, Anda-
lusia
Cullman: R. A. Culpepper,
Cullman; J. G. Daves, Cull-
man

Dale: G. R. Smith, Ozark
Dallas: J. P. Chapman, Selma
E. Day, Orrville; J. R. Gray-
son, Selma
DeKalb: B. M. Clayton, Fort
Payne; C. D. Killian, Fort
Payne
Elmore: J. E. Cameron, Ec-
lectic
Etowah: E. H. Cross, Jr., Gads-
den
Fayette: A. C. Branyon, Fay-
ette; G. E. Stewart, Fayette
Franklin: J. R. Sherman, Phil
Campbell; W. E. Wilson,
Russellville
Geneva: C. P. Gay, Geneva;
L. S. Nichols, Geneva
Hale: C. A. Poellnitz, Greens-
boro
Houston: L. Hilson, Dothan
Jackson: W. L. Stubbs, Dut-
ton; W. C. Williams, Bridge-
port
Jefferson: C. J. Colquitt, Bes-
semer; C. H. Ford, Bir-
mingham; A. L. Glaze, Bir-
mingham; K. F. Kesmodel,
Birmingham; C. O. King,
Birmingham; R. M. Pool,
Fairfield; F. C. Wilson, Bir-
mingham
Lamar: W. L. Box, Sulligent;
J. M. Roberts, Vernon
Lauderdale: W. J. Callaway,
Florence

Lawrence: J. F. Huey, Hills-
boro; H. C. McCullough,
Town Creek
Lee: P. W. Auston, Opelika;
A. H. Graham, Opelika
Limestone: H. A. Darby, Ath-
ens
Macon: Murray Smith, Tuske-
gee
Madison: C. A. Grote, Hunts-
ville; W. G. McCown, Hunts-
ville
Marengo: W. T. Cocke, De-
mopolis; C. N. Lacey, De-
mopolis
Marion: S. S. Busby, Guin; M.
S. White, Hamilton
Marshall: J. M. Crawford,
Arab; A. L. Isbell, Albert-
ville
Mobile: H. B. Dowling, Mo-
bile; S. H. Stephens, Mo-
bile
Monroe: R. D. Neal, Monroe-
ville
Montgomery: Robert Parker,
Montgomery; A. E. Thomas,
Montgomery; W. W. Wilker-
son, Montgomery
Morgan: J. C. Bragg, Deca-
tur; J. B. Elliott, Falkville
Perry: M. H. Eskew, Union-
town; J. V. Howell, Marion
Fike: W. H. Abernethy, Troy

Randolph: C. E. Ford, Roanoke; W. W. Stevenson, Roanoke
 Shelby: J. I. Mitchell, Calera; L. C. Parnell, Siluria
 St. Clair: T. L. Rennie, Pell City; J. A. Watson, Springville
 Sumter: R. C. Hill, York; R. D. Spratt, Livingston
 Talladega: W. G. Casey, Talladega; G. W. Colvin, Lincoln
 Tallapoosa: L. H. Hamner, Camp Hill
 Tuscaloosa: F. A. Kay, Tuscaloosa; Alston Maxwell, Tuscaloosa
 Walker: C. K. Gilder, Carbon Hill; A. M. Waldrop, Jasper
 Washington: I. C. Sumner, Chatom
 Wilcox: P. E. Godbold, Pine Hill; Paul Jones, Camden
 Winston: R. Lee Hill, Haleyville; M. L. Stephens, Haleyville

MEMBERS

A

Abbott, C. E., Tuscaloosa
 Akin, J. M., Birmingham
 Alison, J. F., Selma
 Allgood, H. W., Fairfield
 Anderson, B. F., Sellers
 Atwood, A. L., Birmingham
 Austin, B. F., Montgomery
 Awtrey, Hugh, Guntersville

B

Bailey, W. C., Decatur
 Bancroft, Joe, Birmingham
 Banks, Joe, Dadeville
 Barnard, R. M., Arab
 Baumhauer, J. H., Mobile
 Bector, J. A., Birmingham
 Beddow, W. H., Birmingham
 Bell, J. Mac, Mobile
 Benedict, S. R., Birmingham
 Bird, B. C., Montgomery
 Black, J. W., Ensley
 Blair, A. W., University
 Blake, T. M., Double Springs
 Blakeney, A. L., Newtonville
 Blue, J. H., Bessemer
 Board, O. P., Birmingham
 Boulware, T. M., Birmingham
 Bowman, J. L., Montgomery
 Bradford, D. C., Birmingham
 Branch, J. L., Montgomery
 Brannon, R. M., Birmingham
 Branscomb, Louise, Birmingham
 Britton, J. W., Anniston
 Bruce, B. S., Opelika
 Burkett, W. T., Hamilton
 Burns, W. A., Birmingham

C

Caffey, B. F., Choccolocco
 Caldwell, Herbert, Tuscaloosa
 Callaway, R. R., Birmingham
 Callen, Russell, Birmingham
 Cameron, A. C., Birmingham
 Camp, H. G., Jasper
 Camp, J. S., Jasper
 Campbell, J. A., Dothan
 Carmichael, J. L., Birmingham
 Carpenter, B. S., Fairfield
 Carraway, C. N., Birmingham
 Carter, H. R., Birmingham

Carter, M. B., Birmingham
 Chandler, J. R., Bessemer
 Chapman, C. H., Andalusia
 Chapman, J. A., Alexander City
 Chapman, J. C., Birmingham
 Chapman, W. S., Birmingham
 Chamblee, Z. B., Birmingham
 Chenault, E. M., Decatur
 Clarke, N. G., Ensley
 Clayton, Price, Russellville
 Clements, F. H., Birmingham
 Cleveland, C. H., Anniston
 Cloud, R. E., Ensley
 Clyde, W. A., Fairfield
 Cobbs, B. W., Montgomery
 Cocke, N. P., Birmingham
 Coggin, F. R., Waverly
 Cole, Leslie G., Lineville
 Coleman, G. C., Ensley
 Collier, J. P., Birmingham
 Collier, S. W., Birmingham
 Collins, T. A., Birmingham
 Comer, R. T., Birmingham
 Compton, W. W., Fairfield
 Connell, I. L., Birmingham
 Conwell, H. E., Fairfield
 Cooper, J. B., Birmingham
 Copeland, M. A., Birmingham
 Cornelius, L. B., Cullman
 Corrington, D. D., Talladega
 Coston, H. R., Birmingham
 Coston, R. M., Birmingham
 Coxwell, A. B., Monroeville
 Crawford, J. H., Columbiana
 Crelly, H. C., Birmingham
 Crowder, J. W., Bessemer
 Crutcher, J. S., Jr., Huntsville
 Curtis, R. C., Calera

D

Daly, E. W., Birmingham
 Davidson, A. W., Bessemer
 Davidson, M. T., Birmingham
 Davis, E. W., Birmingham
 Dean, Leon, Ensley
 Deaver, W. T., Birmingham
 Denison, G. A., Birmingham
 Dennis, J. W., Montgomery
 Denny, T. H., Wadley
 Denson, F. H., Bessemer
 Dixon, D. P., Talladega
 Dodson, J. H., Mobile
 Dodson, R. B., Cullman

Doherty, D. H., Selma
 Donald, D. C., Birmingham
 Donald, J. M., Birmingham
 Donald, T. C., Birmingham
 Donald, W. J., Athens
 Donnelly, C. A., Birmingham
 Douglas, G. F., Birmingham
 Douglass, John, Birmingham
 Dubose, F. G., Maplesville
 Duncan, M. M., Huntsville
 Durrett, E. B., Bessemer

E

Edmonson, J. H., Birmingham
 Eggleston, J. R., Decatur
 Elgin, C. E., Praco

F

Fargason, C. C., Dadeville
 Falletta, P. T., Birmingham
 Ferguson, Burr, Birmingham
 Fonville, W. D., Birmingham
 Ford, C. E., Roanoke
 Fowler, J. T., Birmingham
 Fox, C. A., Birmingham
 Frasier, A. S., Dothan
 Frazer, E. B., Mobile

G

Gaines, C. D., Birmingham
 Gaines, Toulmin, Mobile
 Garmon, C. N., Bessemer
 Garrett, J. D., Midland City
 Garrison, J. E., Birmingham
 Gay, A. J., Roanoke
 Gay, J. S., Ashland
 Gehrken, H. S., Birmingham
 Gill, D. G., Montgomery
 Gillespie, J. P., Gadsden
 Gipson, A. C., Gadsden
 Givhan, E. G., Jr., Birmingham
 Gladney, J. C., Jasper
 Glasgow, R. S., Adamsville
 Glasgow, T. J., Russellville
 Goode, J. H., Tuscaloosa
 Graham, G. S., Birmingham
 Graham, J. B., Talladega
 Graves, A. W., Gadsden
 Gravlee, I. M., Mobile
 Green, A. H., Birmingham
 Green, E. P., Birmingham
 Green, E. P., Jacksonville

Green, R. C., Birmingham
Griffith, H. A., Sheffield
Grimes, O. R., Gadsden
Guest, R. J., Jr., Fort Payne
Gwin, J. W., Bessemer
Gwin, P. E., Sumiton

H

Hairston, W. G., Birmingham
Hamilton, G. C., Piedmont
Hamrick, R. A., Birmingham
Hamrick, R. H., Birmingham
Hanby, E. K., Attalla
Hannon, W. C., Mobile
Hardin, S. T., Tuscaloosa
Hardy, W. B., Birmingham
Hargis, E. H., Birmingham
Harper, W. F., Selma
Harris, F. W., Birmingham
Harris, H. A., Ensley
Haun, C. A., Birmingham
Hays, J. H., Birmingham
Hays, Luther, Culman
Head, W. C., Bessemer
Heath, M. J., Ensley
Herrin, C. E., Cullman
Hill, J. H., Talladega
Hill, V. H., Mobile
Hogan, E. P., Birmingham
Holley, J. F., Lockhart
Hollis, L. W., Mobile
Horn, J. R., Jr., Bessemer
Horn, S. W., Bessemer
Howell, H. W., Hamilton
Hubbard, L. W., Tarrant City
Hughes, M. P., Gadsden
Hughes, V. P., Eva
Hutchinson, W. H., Childersburg
Hyatt, E. M., Albertville

I

Issos, D. N., Birmingham

J

Jackson, A. C., Jasper
Jackson, B. F., Montgomery
Jackson, C. B., Jasper
Jackson, H. L., Birmingham
Jackson, L. F., Panola
Jenkins, J. F., Acmar
Jenkins, L. A., Birmingham
Johns, L. J., Birmingham
Johnson, G. L., Tuscaloosa
Johnston, J. C., Chapman
Johnston, N. A., Adamsville
Jones, W. N., Birmingham
Jordan, J. S., Birmingham

K

Kennedy, Hughes, Jr., Birmingham
Kennedy, J. J., University

Kiehnhoff, G. W., Tuscaloosa
Kimmey, J. M., Columbiana
Kincannon, L. T., Birmingham
Kinkead, K. J., Birmingham
Kirby, L. E., Birmingham
Kirk, A. A., Tuscaloosa

L

Lamar, C. L., Birmingham
Laughlin, J. B., Huntsville
Lavender, C. B., Fairfield
Lavender, W. A., Birmingham
Lawrence, Toombs, Tuscaloosa
Ledbetter, S. L., Jr., Birmingham
Lee, L. T., Selma
Leland, Joseph, Birmingham
Levy, Harry, Birmingham
Lewis, H. J., Birmingham
Leyden, H. A., Anniston
Lewis, C. F., Birmingham
Lewis, T. K., Birmingham
Lineberry, E. D., Birmingham
Linn, J. E., Birmingham
Lisenby, J. O., Atmore
Lister, R. H., Birmingham
Little, E. G., Blossburg
Littlejohn, W. S., Birmingham
Littlepage, G. F., Sheffield
Locke, W. W., Birmingham
Long, D. J., Montgomery
Long, J. R., Marion
Long, W. W., Birmingham
Love, J. T., Birmingham
Love, W. J., Opelika
Lovelady, R. G., Birmingham

M

Magruder, T. V., Birmingham
Majors, W. B., Birmingham
Malone, E. Y., Trussville
Marcus, T. J., Clanton
Marsh, J. S., Collinsville
Martin, H. F., Birmingham
Martin, J. H., Selma
Martin, R. A., Pell City
Martin, W. A., Birmingham
Martin, W. B., Warrior
McBurney, Ralph, Tuscaloosa
McCulloch, Hugh, Sr., West Point
Ga.
McDaniel, J. C., Birmingham
McGahey, T. P., Birmingham
McGehee, H. T., Birmingham
McKinnon, H. A., Birmingham
McLean, C. C., Birmingham
McLester, J. B., Birmingham
McNeill, R. B., Jemison
McQueen, J. P., Birmingham
McQuiddy, R. C., Birmingham
Mehaffey, J. W., Birmingham
Meigs, S. C., Centerville
Merriam, G. C., Kellerman
Mertens, P. S., Montgomery

Meyer, Jerome, Birmingham
Miller, J. E., Huntsville
Miller, W. L., Gadsden
Mitchell, H. E., Birmingham
Montgomery, J. E., Birmingham
Moore, E. M., Clayton
Moore, H. G., Dixiana
Moorehead, M. T., Tuscaloosa
Morgan, J. O., Gadsden
Morgan, Ralph, Birmingham
Morland, H. C., Birmingham
Murphree, C. L., Gadsden
Murphree, L. R., Decatur
Murphy, G. E., Birmingham

N

Neely, M. C., Birmingham
Neville, C. W., Flat Creek
Newfield, S. U., Birmingham
Newman, Lucian, Scottsboro
Nicholls, W. L., Bessemer
Nolan, M. M., Birmingham
Norton, E. M., Fairfield
Nourse, A. L., Anniston

O

O'Connell, Edward, Birmingham
Odom, H. G., Irondale
O'Gwynn, J. C., Jr., Mobile
Orr, W. L., Ozark
Orton, A. E., Pratt City

P

Parsons, W. C., Birmingham
Partlow, R. C., Tuscaloosa
Patton, T. H., Tuscaloosa
Peake, J. D., Fairfield
Pearce, H. E., Tarrant
Peck, Willena, Montevallo
Peters, U. J. W., Birmingham
Pope, E. C., Birmingham
Posey, B. F., Birmingham
Posey, J. F., Anniston
Powers, A. D., Athens
Prescott, W. E., Birmingham
Prescott, W. E., Jr., Birmingham
Pugh, B. B., Uniontown
Purser, Thomas Jr., Birmingham

R

Ransom, W. W., Birmingham
Ray, E. A., Birmingham
Ray, E. C., Ensley
Reagan, Cas, Birmingham
Reaves, J. U., Mobile
Reynolds, F. D., Montgomery
Riggs, F. W., Birmingham
Roan, A. M., Decatur
Robertson, B. O., Birmingham
Robertson, J. P., Birmingham
Roe, L. W., Mobile
Rosser, W. J., Birmingham

Rountree, W. B., Birmingham
Rudolph, C. M., Birmingham
Russell, R. O., Birmingham

S

Salter, C. L., Talladega
Scales, J. P., Livingston
Scarborough, B. C., Albertville
Schoolar, T. E., Centerville
Scofield, T. F., Birmingham
Scott, E. M., Birmingham
Scott, E. L., Birmingham
Scrivner, J. D., Berry
Segrest, G. O., Mobile
Seibold, J. L., Birmingham
Self, G. W., Village Springs
Sellers, H. G., Birmingham
Sellers, I. J., Birmingham
Sellers, N. E., Anniston
Sellers, W. D., Birmingham
Shamblin, J. R., Tuscaloosa
Shepherd, R. H., Townley
Sheppard, J. T., Gadsden
Sherrill, J. D., Birmingham
Shugerman, H. P., Birmingham
Sibley, B. D., Birmingham
Silvey, G. E., Gadsden
Simon, H. E., Birmingham
Sims, A. G., Birmingham
Sims, J. A., Renfro
Simpson, J. W., Birmingham
Simpson, J. W., Parrish
Skinner, Marcus, Selma
Smith, F. C., Bessemer
Smith, Greene, Ensley
Smith, J. C., Birmingham

Smith, J. L., Montgomery
Smith, M. E., America
Smith, T. L., Birmingham
Snoddy, J. S., Russellville
Sorrell, L. E., Birmingham
Sparks, D. H., Birmingham
Sparks, W. A., Sayre
Springer, H. C., Eutaw
Stabler, A. L., Birmingham
Staples, J. G., Gorgas
Stevenson, F. C., Montgomery
Stewart, R. C., Sylacauga
Stitt, Frank, Pell City
Street, T. H., Alexander City
Strock, C. S., Verbena
Stubbs, S. G., Birmingham
Stubbs, W. L., Dutton
Suggs, S. D., Montgomery
Swedlaw, Henry, Birmingham

T

Tarwater, J. S., Tuscaloosa
Terhune, S. R., Birmingham
Terrell, J. W., Ensley
Thomas, J. L., Holt
Thuss, W. G., Birmingham
Trice, D. H., Boligee
Troje, O. R., Fairfield
Tucker, Lee, Cullman
Turlington, L. F., Birmingham

U

Underwood, N. P., Russellville
Underwood, S. S., Birmingham

V

Vance, J. G., Birmingham

W

Wainwright, S. P., Birmingham
Walker, A. M., Tuscaloosa
Walker, L. M., Jasper
Wallace, A. D., Plantersville
Ward, J. A., Birmingham
Ward, W. R., Birmingham
Warren, W. E., Fairfield
Washam, J. M., Talladega
Watson, Jerre, Anniston
Weathington, Lee, Boaz
Weil, Clarence, Montgomery
Welch, S. H., Birmingham
Whetstone, A. K., Sylacauga
Whiteside, H. B., Ohatchee
Whiteside, M. S., Cullman
Wiley, C. C., Birmingham
Wilkinson, H. B., Montgomery
Wilks, A. E., Powderly
Williams, Frasier, Dothan
Williams, James, Jacksonville
Williamson, G. W., Bessemer
Wilson, J. D., Birmingham
Wise, I. M., Mobile
Wood, G. L., Andalusia
Wood, J. W., Hanceville
Wood, N. N., Birmingham
Woodson, L. G., Birmingham
Woodson, R. C., Birmingham
Woolf, J. H., Piedmont
Wynne, W. H., Ensley

Y

York, A. A., Empire

VISITORS

Dr. W. M. Adams, Ripley, Miss.
Dr. B. R. Bradford, Birmingham
Dr. G. S. Bryan, Amory, Miss.
Dr. R. B. Caldwell, Baldwin, Miss.
Dr. J. W. Cox, New York
Dr. H. J. Denman, Birmingham
Dr. W. E. Findeisen, Birmingham
Dr. D. H. Finlay, Blountstown
Dr. Morris Fishbein, Chicago
Dr. D. K. Freeman, Birmingham
Dr. E. C. Hagood, Tohatchi, N. M.
Dr. J. M. Lindsey, Hightower
Dr. J. R. McCord, Atlanta
Dr. J. A. Myers, Minneapolis
Dr. Baxter Rittenberry, Homewood
Dr. O. W. Roberts, Carrollton, Ga.
Dr. J. E. Rose, Chattahoochee,

Fla.
Dr. J. G. Standifer, Blakely, Ga.
Mrs. J. A. Becton, Birmingham
Mrs. S. R. Benedict, Birmingham
Mrs. W. G. Casey, Talladega
Mrs. W. S. Chapman, Birmingham
Mrs. S. W. Collier, Birmingham
Mrs. R. M. Coston, Birmingham
Mrs. J. H. Crawford, Columbiana
Mrs. J. M. Donald, Birmingham
Mrs. H. R. Farmer, Fairfield
Mrs. J. S. Gay, Ashland
Mrs. E. H. Hargis, Birmingham
Mrs. Vivian H. Hill, Mobile
Mrs. J. S. Hough, Livingston
Mrs. George Kiehnhoff, Tuscaloosa
Mrs. J. O. Lisenby, Atmore
Mrs. W. G. McCown, Huntsville
Mrs. S. U. Newfield, Birmingham
Mrs. E. M. Norton, Fairfield

Mrs. W. C. Parsons, Birmingham
Mrs. A. W. Ralls, Gadsden
Mrs. John M. Roberts, Vernon
Mrs. Mack Rogers, Birmingham
Mrs. J. D. Scrivner, Berry
Mrs. M. E. Smith, America
Mrs. J. G. Staples, Gorgas
Mrs. F. C. Stevenson, Montgomery
Miss Frances Stevenson, Montgomery
Mrs. Elizabeth Underwood, Russellville
Mrs. N. P. Underwood, Russellville
Mrs. A. M. Walker, Tuscaloosa
Mrs. A. D. Wallace, Plantersville
Mrs. C. K. Weil, Montgomery
Mrs. W. E. Wilson, Russellville
Mrs. J. W. Wood, Hanceville
Mrs. W. D. Wood, Camp Hill

SUMMARY OF ANNUAL ATTENDANCE

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1910	10	44	83	157	51	344	Mobile
1911	14	53	66	139	19	291	Montgomery
1912	16	63	92	348	40	559	Birmingham
1913	7	49	83	124	17	280	Mobile
1914	16	67	85	226	20	414	Montgomery
1915	32	74	108	429	49	692	Birmingham
1916	19	66	92	106	41	306	Mobile
1917	18	64	96	199	32	409	Montgomery
1918	27	63	80	257	44	471	Birmingham
1919	22	43	87	94	102	348	Mobile
1920	16	61	59	85	51	272	Anniston
1921	26	65	73	183	58	405	Montgomery
1922	26	72	76	314	68	556	Birmingham
1923	14	48	66	106	50	284	Mobile
1924	29	70	84	230	79	492	Montgomery
1925	27	78	97	328	113	643	Birmingham
1926	33	74	105	194	131	537	Mobile
1927	36	85	104	252	87	564	Montgomery
1928	33	77	108	507	106	831	Birmingham
1929	19	60	102	176	109	466	Mobile
1930	32	83	106	286	102	609	Montgomery
1931	26	80	116	410	158	790	Birmingham
1932	19	60	101	158	133	471	Mobile
1933	21	74	103	264	85	547	Montgomery
1934	26	75	97	404	53	655	Birmingham

THE ROLL OF COUNSELLORS

REVISION OF 1934

LIFE COUNSELLORS

Name and Address	Date of Election
Andrews, Glenn, Montgomery (2).....	1893
Baker, J. N., Montgomery (2).....	1905
Betts, William Frank, Evergreen (2).....	1904
Bondurant, Eugene DuBose, Mobile (1).....	1894
Britt, W. S., Eufaula (3).....	1905
Brothers, Thomas J., Anniston (4).....	1914
Cameron, Matthew Bunyan, Eutaw (6).....	1893
Cunningham, William Moody, Jasper (7).....	1912
Davie, Mercer Stillwell, Dothan (3).....	1904
Faulk, William M., Tuscaloosa (6).....	1913
Givhan, Edgar Gilmore, Montevallo (6).....	1903
Gordon, Samuel A., Marion (6).....	1913
Gresham, George L., Andalusia (2).....	1913
Guice, Charles Lee, Gadsden (5).....	1899
Harper, Wm Wade, Selma (4).....	1902
Harris, Elisha McCullough, Russellville (7).....	1904
Harris, Seale, Birmingham (9).....	1903
Harrison, William Groce, Birmingham (9).....	1896
Heacock, Jos. D., Birmingham (9).....	1912
Heflin, Howell T., Birmingham (9).....	1914
Heflin, Wyatt, Birmingham (9).....	1893
Hill, Luther Leonidas, Montgomery (2).....	1888
Hill, Robert Somerville, Montgomery (2).....	1898
Howle, James Augustus, Falkville (8).....	1895
Jones, Capers Capehart, East Lake (9).....	1881
Justice, Oscar Suttle, Central (4).....	1896
Lupton, Frank A., Birmingham (9).....	1913
McCain, William Jasper, Livingston (6).....	1898
McElrath, William Sparke, Cedar Bluff (5).....	1908
McLeod, John Calvin, Bay Minette (2).....	1911
McLester, James Somerville, Birmingham (9).....	1913
Mohr, Chas. A., Mobile (1).....	1909
Morris, William E., Georgiana (2).....	1913

Oates, William Henry, Mobile (1).....	1913
Partlow, William Dempsey, Tuscaloosa (6).....	1909
Petty, Frank Paul, Decatur (8).....	1909
Pride, William Thomas, Madison (8).....	1899
Prince, Edward Mortimer, Birmingham (9).....	1909
Ray, Jacob Usery, Woodstock (6).....	1906
Sankey, Howard J., Nauvoo (7).....	1914
Simms, Benjamin Britt, Talladega (4).....	1901
Stewart, John Pope, Attalla (5).....	1908
Talley, Dyer Findley, Birmingham (9).....	1902
Thigpen, Charles Alston, Montgomery (2).....	1900
Turner, James Perry, Cropwell (4).....	1912
Wilkinson, David Leonidas, Birmingham (9).....	1902
Total 46	

ACTIVE COUNSELLORS

Those marked with a † are serving last terms of six years.
Those marked with an asterisk (*) are serving second terms of seven years.

Those without a symbol are serving first terms of seven years.

The numeral is the number of the congressional district.

	Date of	
	Elec- tion	Expi- ration
Abernethy, Floyd L., Foley (2).....	1933	to 1940
Acker, Paul Jerome Morris, Mobile (1).....	*1930	to 1937
Alison, Samuel Blakemore, Minter (4).....	†1933	to 1939
Anderson, Thos. J., Greensboro (6).....	1933	to 1940
Ashcraft, Virgil Lee, Reform (7).....	†1933	to 1939
Bailey, E. B., Demopolis (1).....	1928	to 1935
Beard, Robert Briggs, Troy (2).....	1932	to 1939
Bedsole, James Goodman, Jackson (1).....	*1929	to 1936
Burdeshaw, Shelby L., Headland (3).....	*1928	to 1935
Caldwell, Edwin Valdivia, Huntsville (8).....	†1932	to 1938
Cannon, Douglas L., Montgomery (2).....	1928	to 1935
Chandler, Joel C., Columbiana (6).....	*1930	to 1937
Chenault, Frank L., Decatur (8).....	1917	
Cowles, Wm. L., Birmingham (9).....	1933	to 1940
Craddock, French H., Sylacauga (4).....	1932	to 1939
Crutcher, John Sims, Athens (8).....	1915	
Cryer, George A., Anniston (4).....	*1932	to 1939
Dabney, Marye Y., Birmingham (9).....	*1930	to 1937
Doughty, Mordecai Edward, Slocumb (3).....	*1929	to 1936
Dowling, Judson Davis, Birmingham (9).....	*1929	to 1936
Dupree, Marion W., Athens (8).....	*1930	to 1937
Garber, James R., Birmingham (9).....	1932	to 1939
Gragg, Vincent Jones, Clanton (6).....	*1928	to 1935
Granger, F. G., Ashford (3).....	1928	to 1935
Greer, William H., Sheffield (8).....	†1934	to 1940
Gresham, Walter A., Russellville (7).....	1933	to 1940
Hagood, M. H., Brewton (2).....	*1931	to 1938
Hatchett, Wm. C., Huntsville (8).....	1929	to 1936
Hayes, Charles Philips, Elba (3).....	†1934	to 1940
Hayes, Julius Poe, Clanton (6).....	†1934	to 1940
Hendrick, Walter Branham, Hurtsboro (3).....	1915	
Hill, Robert L., Winfield (7).....	*1931	to 1938
Hollis, Jonathan Shelton, Covin (7).....	*1930	to 1937
Hough, James Spencer, Livingston (6).....	1930	to 1937
Howell, William Edward, Haleyville (7).....	†1932	to 1938
Hubbard, T. Brannon, Montgomery (2).....	*1932	to 1938
Jackson, Alva A., Florence (8).....	†1932	to 1938
James, Ashley D., Choctaw (1).....	1915	
James, Norman Gilchrist, Hayneville (2).....	*1928	to 1935
Jordan, Samuel E., Highland Home (2).....	1933	to 1940
Kirkpatrick, Samuel, Selma (4).....	1933	to 1940
Leach, Sydney, Tuscaloosa (6).....	†1934	to 1940
Lester, Belford S., Birmingham (9).....	*1930	to 1937
Lewis, Walter A., Enterprise (3).....	1933	to 1940
Lightfoot, Phillip Malcolm, Shorter (3).....	†1932	to 1938
Long, Clarence, Hurtsboro (3).....	†1934	to 1940
Lull, Cabot, Birmingham (9).....	†1933	to 1939
Martin, James Cordie, Cullman (7).....	1917	
Martin, John A., Montgomery (2).....	1933	to 1940
Mason, E. M., Birmingham (9).....	*1931	to 1938

ACTIVE COUNSELLORS—Continued

	Date of Elec- Expi- tion tion ration
Mason, James Monroe, Birmingham (9).....	†1932 to 1938
Mayer, Kossuth Aaron, Lower Peach Tree (1).....	†1933 to 1939
McAdory, Edward Dudley, Cullman (7).....	†1934 to 1940
McCall, Daniel T., Mobile (1).....	*1930 to 1937
Miller, W. T., Ft. Payne (5).....	1928 to 1935
Moore, David S., Jr., Birmingham (9).....	1932 to 1939
Moxley, Joseph Benjamin, Brantley (2).....	*1928 to 1935
Newman, Samuel Harris, Dadeville (5).....	*1932 to 1939
Noel, W. E., Boaz (5).....	1928 to 1935
Noland, Lloyd, Fairfield (9).....	1929 to 1936
Nolen, John A. M., Alexander City (5).....	†1934 to 1940
Oswalt, G. G., Mobile (1).....	1929 to 1936
Parker, Lorenzo D., Andalusia (2).....	1933 to 1940
Perdue, James D., Mobile (1).....	1933 to 1940
Price, Albert Bascom, Gordo (7).....	†1933 to 1939
Ralls, Arthur W., Gadsden (5).....	†1933 to 1939
Redden, Raymond Hollis, Sulligent (7).....	*1933 to 1940
Rountree, W. S., Wylam (9).....	*1931 to 1938
Rucker, Edmon W., Birmingham (9).....	*1929 to 1936
Scott, Walter F., Birmingham (9).....	*1929 to 1936
Searcy, Geo. H., Tuscaloosa (6).....	1929 to 1936
Searcy, Harvey Brown, Tuscaloosa (6).....	*1930 to 1937
Shaddix, Marion L., Alabama City (5).....	1932 to 1939
Shropshire, Courtney William, Birmingham (9).....	*1930 to 1937
Sledge, Edward Simmons, Mobile (1).....	*1929 to 1936
Smith, Russell Aubrey, Brewton (2).....	†1932 to 1938
Speir, Phillip V., Greenville (2).....	1917
Tankersley, James, Prattville (4).....	1928 to 1935
Taylor, Woodie R., Town Creek (8).....	*1932 to 1939
Thomas, Eugene Marvin, Prattville (4).....	†1934 to 1940
Waldrop, R. W., Bessemer (9).....	*1929 to 1936
Walker, Alfred A., Birmingham (9).....	*1930 to 1937
Walls, J. J., Alexander City (5).....	*1931 to 1938
Walsh, Groesbeck, Fairfield (9).....	1933 to 1940
Ward, Henry Silas, Birmingham (9).....	1915
White, Alexander L., Thomasville (1).....	1928 to 1935
Whitman, Clayborne R., Tuscumbia (8).....	1929 to 1936
Wilkerson, Fred Wooten, Montgomery (2).....	†1933 to 1939
Williams, Mark Johnson, Oxford (4).....	†1934 to 1940
Williamson, George W., Hartford (3).....	†1932 to 1938
Wood, Wiley D., Camp Hill (5).....	1933 to 1940
Wright, David H., Berry (7).....	1932 to 1939
Total 92	

COUNSELLORS-ELECT

Alison, James F., Selma (4).....	1934 to 1941
Carter, William R., Repton (2).....	1934 to 1941
Eskew, M. H., Uniontown (6).....	1934 to 1941
Gilder, George S., Carbon Hill (7).....	1934 to 1941
Salter, Wilbur M., Anniston (4).....	1934 to 1941
Shamblin, John L., Tuscaloosa (6).....	1934 to 1941
Smith, Gordon R., Ozark (3).....	1934 to 1941
Welch, Stewart, Birmingham (9).....	1934 to 1941
Total 8	

THE ROLL OF THE COLLEGE OF COUNSELLORS BY CONGRESSIONAL DISTRICTS

On this roll the names of the Counsellors are given by Congressional Districts. It is intended to serve as a guide in the election of new Counsellors, with a view to the distribution of them in approximate proportion to the number of members in the several districts. It is not considered to be good policy, and it is not considered to be fair and right, to give a few large towns greatly more than their pro rata share of Counsellors. The calculations are based on the nearest whole number. On April 1, 1934, there were 1,449 members in the county medi-

cal societies. That would give one Counsellor to every 14 members. The membership set forth in the following is that of April 1.

FIRST DISTRICT

Names of Counsellors—A. D. James, Choctaw; J. G. Bedsole and A. L. White, Clarke; E. B. Bailey, Marengo; E. S. Sledge, P. J. M. Acker, D. T. McCall, G. G. Oswalt, and J. D. Perdue, Mobile; and K. A. Mayer, Wilcox.

County	Members	Counsellors
Choctaw	10	1
Clarke	8	2
Marengo	12	1
Mobile	97	5
Monroe	15	0
Washington	4	0
Wilcox	11	1
	157	10

SECOND DISTRICT

Names of Counsellors—F. L. Abernethy, Baldwin; P. V. Speir, Butler; W. R. Carter, Conecuh; L. D. Parker, Covington; J. B. Moxley and S. E. Jordan, Crenshaw; M. H. Hagood and R. A. Smith, Escambia; N. G. James, Lowndes; T. B. Hubbard, F. W. Wilkerson, J. A. Martin and Douglas L. Cannon, Montgomery; and R. B. Beard, Pike.

County	Members	Counsellors
Baldwin	11	1
Butler	15	1
Conecuh	7	1
Covington	16	1
Crenshaw	12	2
Escambia	12	2
Lowndes	5	1
Montgomery	78	4
Pike	20	1
	176	14

THIRD DISTRICT

Names of Counsellors—C. P. Hayes and W. A. Lewis, Coffee; G. R. Smith, Dale; M. E. Doughty and G. W. Williamson, Geneva; S. L. Burdeshaw, Henry; F. G. Granger, Houston; P. M. Lightfoot, Macon; and Clarence Long and W. B. Hendrick, Russell.

County	Members	Counsellors
Barbour	12	0
Bullock	8	0
Coffee	14	2
Dale	13	1
Geneva	17	2
Henry	8	1
Houston	26	1
Lee	19	0
Macon	10	1
Russell	6	2
	133	10

FOURTH DISTRICT

Names of Counsellors—James Tankersley and E. M. Thomas, Autauga; W. M. Salter, M. J. Williams and G. A. Cryer, Calhoun; J. F. Alison, S. B. Alison and S. Kirkpatrick, Dallas; and French Craddock, Talladega.

County	Members	Counsellors
Autauga	6	2
Calhoun	39	3
Clay	7	0
Coosa	4	0
Dallas	38	3
Elmore	16	0
St. Clair	12	0
Talladega	24	1
	146	9

FIFTH DISTRICT

Names of Counsellors—W. T. Miller, DeKalb; A. W. Ralls and M. L. Shaddix, Etowah; W. E. Noel, Marshall; and J. A. M. Nolen, J. J. Walls, S. H. Newman and W. D. Wood, Tallapoosa.

County	Members	Counsellors
Chambers	16	0
Cherokee	4	0
Cleburne	3	0
DeKalb	17	1
Etowah	45	2
Marshall	16	1
Randolph	11	0
Tallapoosa	15	4
	127	8

SIXTH DISTRICT

Names of Counsellors—J. P. Hayes and V. J. Gragg, Chilton; T. J. Anderson, Hale; M. H. Eskew, Perry; Joel Chandler, Shelby; J. S. Hough, Sumter; and Sydney Leach, H. B. Searcy, G. H. Searcy and J. L. Shamblin, Tuscaloosa.

County	Members	Counsellors
Bibb	11	0
Chilton	11	2
Greene	5	0
Hale	6	1
Perry	8	1
Shelby	16	1
Sumter	11	1
Tuscaloosa	44	4
	112	10

SEVENTH DISTRICT

Names of Counsellors—J. C. Martin and E. D. McAdory, Cullman; J. S. Hollis and D. H. Wright, Fayette; W. A. Gresham, Franklin; R. H. Redden, Lamar; R. L. Hill, Marion; V. L. Ashcraft and A. B. Price, Pickens; G. S. Gilder, Walker; and W. E. Howell, Winston.

County	Members	Counsellors
Blount	13	0
Cullman	13	2
Fayette	8	2
Franklin	16	1
Lamar	9	1
Marion	13	1
Pickens	11	2
Walker	33	1
Winston	9	1
	125	11

EIGHTH DISTRICT

Names of Counsellors—W. H. Greer and C. R. Whitman, Colbert; A. A. Jackson, Lauderdale; W. R. Taylor, Lawrence; J. S. Crutcher and M. D. Dupree, Limestone; E. V. Caldwell and W. C. Hatchett, Madison; and F. L. Chenault, Morgan.

County	Members	Counsellors
Colbert	16	2
Jackson	11	0
Lauderdale	21	1
Lawrence	9	1
Limestone	10	2
Madison	27	2
Morgan	24	1
	118	9

NINTH DISTRICT

Names of Counsellors—W. L. Cowles, S. H. Welch, H. S. Ward, J. M. Mason, Cabot Lull, R. W. Waldrop, W. F. Scott, E. W. Rucker, J. D. Dowling, M. Y. Dabney, B. S. Lester, C. W. Shropshire, Alfred A. Walker, E. M. Mason, W. S. Rountree, Lloyd Noland, J. R. Garber, D. S. Moore, Jr., and Groesbeck Walsh.

County	Members	Counsellors
Jefferson	358	19

THE ROLL OF CORRESPONDENTS

"Distinguished members of the medical profession residing outside of the State, and Counsellors of the Association, who after not less than ten years of faithful service may have resigned their counsellorships, shall be eligible for election as Correspondents.

"Correspondents shall have the privilege of transmitting or presenting to the Association such communications, or scientific essays, as they may deem proper."—*From the Constitution.*

Name and Address	Date of Election
Andrew J. Coley, Oklahoma City.....	1909
W. S. Thayer, Baltimore.....	1921
Lewellys F. Barker, Baltimore.....	1921
Rudolph Matas, New Orleans.....	1921
Frank Smithies, Chicago.....	1921
John B. Elliott, Jr., New Orleans.....	1921
Howard A. Kelly, Baltimore.....	1921
Wm. J. Mayo, Rochester, Minn.....	1921
George W. Crile, Cleveland, Ohio.....	1921
Henry A. Christian, Boston.....	1921
J. Whitridge Williams, Baltimore, Md.....	1921
Chas. H. Mayo, Rochester, Minn.....	1922
H. A. Royster, Raleigh, N. C.....	1926
Stewart Roberts, Atlanta.....	1927
G. Canby Robinson, Nashville.....	1928
Louis B. Wilson, Rochester, Minn.....	1930
R. S. Cunningham, Nashville.....	1932
A. Benson Cannon, New York.....	1932
J. Shelton Horsley, Richmond.....	1933
Russell L. Cecil, New York.....	1934

SCHEDULE OF THE ANNUAL SESSIONS AND PRESIDENTS SINCE THE RE- ORGANIZATION IN 1868

<i>Place and President</i>	<i>Year</i>
Selma—Albert Galatin Mabry.....	1868
Mobile—Albert Galatin Mabry.....	1869
Montgomery—Richard Frazer Michel.....	1870
Mobile—Francis Armstrong Ross.....	1871
Huntsville—Thomas Childress Osborne.....	1872
Tuscaloosa—George Ernest Kumpe.....	1873
Selma—George Augustus Ketchum.....	1874
Montgomery—Job Sobieski Weatherly.....	1875
Mobile—John Jefferson Dement.....	1876
Birmingham—Edward Davies McDaniel.....	1877
Eufaula—Peter Bryce.....	1878
Selma—Robert Dickens Webb.....	1879
Huntsville—Edmund Pendleton Gaines.....	1880
Montgomery—William Henry Anderson.....	1881
Mobile—John Brown Gaston.....	1882
Birmingham—Clifford Daniel Parke.....	1883
Selma—Mortimer Harvey Jordan.....	1884
Greenville—Benjamin Hogan Riggs.....	1885
Anniston—Francis Marion Peterson.....	1886
Tuscaloosa—Samuel Dibble Seelye.....	1887
Montgomery—Edward Henry Sholl.....	1888
Mobile—Milton Columbus Baldridge.....	1889
Birmingham—Charles Higgs Franklin.....	1890
Huntsville—William Henry Sanders.....	1891
Montgomery—Benjamin James Baldwin.....	1892
Selma—James Thomas Searcy.....	1893
Birmingham—Thaddeus Lindley Robertson.....	1894
Mobile—Richard Matthew Fletcher.....	1895
Montgomery—William Henry Johnston.....	1896
Selma—Barckley Wallace Toole.....	1897
Birmingham—Luther Leonidas Hill.....	1898
Mobile—Henry Altamont Moody.....	1899
Montgomery—John Clarke LeGrande.....	1900
Selma—Russell McWhorter Cunningham.....	1901
Birmingham—Edwin Lesley Marechal.....	1902
Talladega—Glenn Andrews.....	1903
Mobile—Matthew Bunyan Cameron.....	1904
Montgomery—Capers Capehart Jones.....	1905
Birmingham—Eugene DuBose Bondurant.....	1906
Mobile—George Tighlman McWhorter.....	1907
Montgomery—Samuel Wallace Welch.....	1908
Birmingham—Benjamin Leon Wyman.....	1909
Mobile—Wooten Moore Wilkerson.....	1910
Montgomery—Wyatt Heflin Blake.....	1911
Birmingham—Lewis Coleman Morris.....	1912
Mobile—Harry Tutwiler Inge.....	1913
Montgomery—Robert S. Hill.....	1914
Birmingham—Benjamin Britt Simms.....	1915
Mobile—James Norment Baker.....	1916
Montgomery—Henry Green.....	1917
Birmingham—William Dempsey Partlow.....	1918
Mobile—Isaac LaFayette Watkins.....	1919
Anniston—James Somerville McLester.....	1920
Montgomery—Louis William Johnston.....	1921
Birmingham—Dyer F. Talley.....	1922
Mobile—Walter S. Britt.....	1923
Montgomery—W. W. Harper.....	1924
Birmingham—J. D. Heacock.....	1925
Mobile—C. A. Mohr.....	1926
Montgomery—A. L. Harlan.....	1927
Birmingham—John D. S. Davis.....	1928
Mobile—E. V. Caldwell.....	1929
Montgomery—L. E. Broughton.....	1930

<i>Place and President</i>	<i>Year</i>
Birmingham—W. G. Harrison.....	1931
Mobile—Toulmin Gaines.....	1932
Montgomery—Samuel Kirkpatrick.....	1933
Birmingham—James R. Garber.....	1934

SECRETARIES OF THE MEDICAL ASSOCIA- TION OF THE STATE OF ALABAMA

1852-1854.....	George A. Ketchum
1854-1855.....	R. Miller
1869-1873.....	Jerome Cochran
1874-1878.....	B. H. Riggs
1879-1892.....	T. A. Means
1893-1897.....	J. R. Jordan
1897-1904.....	G. P. Waller
1904-1906.....	L. C. Morris
1906-1915.....	J. N. Baker
1915-1923.....	H. G. Perry
1923-1924.....	Douglas L. Cannon
1924-1930.....	B. B. Simms
1930-.....	Douglas L. Cannon

TREASURERS OF THE MEDICAL ASSOCIA- TION OF THE STATE OF ALABAMA

1854-1855.....	W. P. Reese
1869-1898.....	W. C. Jackson
1898-1915.....	H. G. Perry
1915-.....	J. U. Ray

SCHEDULE OF JEROME COCHRAN LECTURERS

- 1899—J. T. Searcy, Tuscaloosa—What Is Insanity?
- 1900—Wm. Osler, Baltimore—Not present.
- 1901—Wm. Osler, Baltimore—Not present.
- 1902—Nathan Bozeman, New York—Declined.
- 1903—George H. Price, Nashville—The History of Medicine.
- 1904—W. S. Thayer, Baltimore—Cardiac and Vascular Complications of Typhoid Fever.
- 1905—Robert Abbe, New York—The Problems of
- 1906—Joseph Collins, Boston—Arteriosclerosis. Surgery.
- 1907—Nicholas Senn, Chicago—Final Triumph of Scientific Medicine.
- 1908—E. L. Marechal, Mobile—Absent.
- 1909—Lewellys F. Barker, Baltimore—Clinical Methods of Cardiac Investigation.
- 1910—Frank S. Meara, New York—Some Problems of Nutrition in Early Life.
- 1911—Rudolph Matas, New Orleans—Inflammatory Tuberculosis.
- 1912—Maurice H. Richardson, Boston—Elimination of Preventable Disasters from Surgery.
- 1913—L. L. Hill, Montgomery—Surgical Complications and Sequelae of Typhoid Fever.
- 1914—Frank Smithies, Chicago—Contributions of the Twentieth Century to the Better Understanding of Gastric Cancer.
- 1915—John B. Elliott, Jr., New Orleans—Abscess of Liver.
- 1916—Howard A. Kelly, Baltimore—Radium Therapy.
- 1917—Wm. J. Mayo, Rochester—Importance of Septic Infection in the Three Great Plagues.
- 1918—George E. Bushnell, Washington—The Army in Relation to the Tuberculosis Problem.

1919—George W. Crile, Cleveland, Ohio—Abdominal Surgery in Civil and Military Hospitals.

1920—Henry A. Christian, Boston—Bright's Disease With Special Reference to Its Treatment.

1921—J. Whitridge Williams, Baltimore—A Critical Review of Twenty-One Years' Experience with Caesarean Section.

1922—Chas. H. Mayo, Rochester, Minn.—The Thyroid and Its Diseases.

1923—Jas. S. McLester, Birmingham—Nutrition in Its Newer Aspects.

1924—James S. Stone, Boston—Abdominal Diagnoses in Children.

1925—H. A. Royster, Raleigh—The Surgeon's Heritage and Outlook.

1926—Stewart Roberts, Atlanta—The Heart Muscle.

1927—G. Canby Robinson, Nashville—The Mechanism of Heart Failure and Its Correction.

1928—John B. Deaver, Philadelphia—Chronic Pancreatitis.

1929—Louis B. Wilson, Rochester, Minn.—Some Suggestions for Improved Training of Medical Specialists.

1930—Walter E. Sistrunk, Dallas, Texas—The Part That Surgical Anesthesia Has Played in Medical Science.

1931—R. S. Cunningham, Nashville, Tenn.—Studies on the Pathology of Tuberculosis and Syphilis.

1932—A. Benson Cannon, New York—Practical Points on the Diagnosis and Treatment of the so-called Lymphoblastoma Group of Diseases.

1933—J. Shelton Horsley, Richmond—Cancer of the Stomach and Colon.

1934—Russell L. Cecil, New York—Present Trends in the Study of Rheumatic Fever and Rheumatoid Arthritis.

OFFICERS OF THE ASSOCIATION

1934-1935

PRESIDENT

W. M. CUNNINGHAM (1935).....Jasper

VICE-PRESIDENTS

G. W. WILLIAMSON (1935).....Hartford

E. D. McADORY (1936).....Cullman

A. B. COXWELL (1937).....Monroeville

W. M. SALTER (1938).....Anniston

SECRETARY

DOUGLAS L. CANNON (1939).....Montgomery

TREASURER

J. U. RAY (1938).....Woodstock

THE STATE BOARD OF CENSORS

E. V. CALDWELL, Chm. (1935).....Huntsville

S. A. GORDON (1935).....Marion

D. T. McCALL (1936).....Mobile

J. S. McLESTER (1936).....Birmingham

G. H. SEARCY (1937).....Tuscaloosa

C. A. THIGPEN (1937).....Montgomery

F. W. WILKERSON (1938).....Montgomery

M. S. DAVIE (1938).....Dothan

J. D. PERDUE (1939).....Mobile

LLOYD NOLAND (1939).....Fairfield

STATE HEALTH OFFICER

J. N. BAKER (1935).....Montgomery

DELEGATES AND ALTERNATES TO THE AMERICAN MEDICAL ASSOCIATION

Delegate—J. N. BAKER.....Montgomery

Alternate—H. B. SEARCY.....Tuscaloosa

Delegate—A. A. WALKER.....Birmingham

Alternate—J. M. WELDON.....Mobile

(Terms expire with the 1935 session of the American Medical Association)

COMMITTEE ON LEGISLATION AND MEDICAL ECONOMICS

JOHN A. MARTIN, Chairman.....Montgomery

G. O. SEGREST.....Mobile

E. F. MOODY.....Dothan

S. KIRKPATRICK.....Selma

J. R. GARBER.....Birmingham

C. L. GUICE.....Gadsden

H. B. SEARCY.....Tuscaloosa

R. A. CULPEPPER.....Cullman

M. M. DUNCAN.....Huntsville

COMMITTEE ON MENTAL HYGIENE

FRANK A. KAY, Chairman, Tuscaloosa.....1938

J. G. BEDSOLE, Jackson.....1935

E. L. McCAFFERTY, Mt. Vernon.....1936

L. H. WOODRUFF, Tuscaloosa.....1937

J. A. BECTON, Birmingham.....1939

COMMITTEE ON MATERNAL AND INFANT WELFARE

A. E. THOMAS, Chairman, Montgomery.....1938

T. M. BOULWARE, Birmingham.....1935

HUGHES KENNEDY, JR., Birmingham.....1936

H. P. DAWSON, Co-Chairman, Montgomery.....1937

J. M. WELDON, Mobile.....1939

COMMITTEE ON PREVENTION OF CANCER

K. F. KESMODEL, Chairman, Birmingham.....1938

J. P. CHAPMAN, Selma.....1935

H. M. SIMPSON, Florence.....1936

I. M. GRAVLEE, Mobile.....1937

J. T. ELLIS, Dothan.....1939

AUXILIARY TO COMMITTEE ON PREVENTION OF CANCER

JOHN A. MARTIN.....Montgomery

ALSTON MAXWELL.....Tuscaloosa

J. B. LAUGHLIN.....Huntsville

NEIL SELLERS.....Anniston

J. A. MEADOWS.....Birmingham

J. O. MORGAN.....Gadsden

COMMITTEE ON PREVENTION OF BLINDNESS AND DEAFNESS

H. F. MARTIN, Chairman, Birmingham.....1935

LUCIEN BROWN, Gadsden.....1936

N. T. DAVIE, Anniston.....1937

B. B. WARWICK, Talladega.....1938

J. T. CATER, Montgomery.....1939

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

DIAGNOSIS AND TREATMENT OF TUBERCULOSIS

The following excerpts are from the 1933 Annual Report of Dr. Henry D. Chadwick, Health Commissioner of Massachusetts. These are from the section of the report dealing with tuberculosis in his State. It is felt by Alabama's State Health Officer that these remarks, emanating as they do from the pen of one of the most outstanding and scholarly workers in the whole field of tuberculosis, are quite worthy of repetition here for the benefit of Alabama's medical profession and health workers. It should prove particularly gratifying to our State Board of Censors to observe the importance and emphasis here placed on the employment of the various forms of collapse therapy in tuberculosis; for it will be recalled that at the last annual session of our Association this Board dealt with the need for a keener appreciation of the possibilities inherent in this type of treatment and urged physicians over the State to become better acquainted with the technics of these procedures, more particularly the simplest of these, pneumothorax.

In discussing diagnosis, Dr. Chadwick says:

"It is somewhat discouraging to know that only about 10 per cent of the admissions to sanatoria are in the minimal stage. If we investigate the records of large city clinics we find that in those that have the best facilities for diagnosis, and x-ray all children who react positively to tuberculin, and make roentgen examinations of all adults the percentage of minimal cases is found to be about 20 per cent. In clinics that do not use the x-ray except where examination of the chest shows suspicious signs, less than 10 per cent of early cases are found. Less dependence should be put on the use of stethoscope and more extensive use should be made of the x-ray. The x-ray, because of its cost, is looked upon by most physicians in the light of a consultation. Instead it should be considered a necessary routine procedure where the question as to whether a person has tuberculosis is to be answered. To do this x-ray films and service must be provided without charge to many individuals. Realizing this fact, consulta-

tion service including x-ray is provided to all physicians by the State Sanatoria and many of the county institutions. This privilege should not be abused by sending patients who can pay a roentgenologist's fee, but all others should have this service. Each State and county sanatorium should be the center for the diagnostic service in its immediate territory. Besides examining patients who come to the institution clinics should be maintained in the more distant localities in connection with hospitals where x-ray equipment is available. The old-time dispensary maintained for diagnosis and for check-up of tuberculosis patients has served a useful purpose in the past, but its methods are now obsolete and it should not be continued".

As regards treatment, he says:

"This has improved very much in the last few years; in fact, one could say that it has been revolutionized by realization of the advantages of collapse therapy. Instead of reserving this method of treatment for the case that fails to respond to the routine bed treatment, it is now considered good practice to use pneumothorax or phrenic nerve operation soon after admission. By doing this the patient has the benefit of local rest applied directly to the diseased lung to supplement the bed treatment that has been carried out to a greater extent than ever before. More cases are arrested and the period of hospitalization is shortened by the use of pneumothorax and surgical procedures. There is an encouraging increase in the use of these methods in State and county sanatoria. At Rutland a recent survey showed 62 per cent of the patients receiving some form of collapse therapy. In the county sanatoria 20 per cent, or 1,088, were having pneumothorax. In addition, 11 per cent of phrenic nerve operations and 4.6 per cent of thoracoplasties were done. This is encouraging but as the benefits from this form of treatment are more generally realized all patients on admission may be studied as to the indications for some form of collapse. At least 75 per cent of them will be found suitable for pneumothorax or other form of collapse therapy".

* * *

TUBERCULOSIS CONTROL IN COUNTIES

The State Department of Health, feeling that in the program of tuberculosis control each county should put forth every effort to take care, both financially and otherwise, of its own problems, has encouraged the building of either small suitable sanatoria, or where financial conditions would not now permit of this, the building of some type of portable cottage, such as the Burr or some modification thereof, in order to facilitate the home isolation of the open case. All agree that, in the absence of prop-

er hospital facilities, every effort should be made to protect the family contacts from infection. While by no means one hundred per cent efficient, the Burr cottage does add some efficiency to our control measures and its more extended use will certainly bring some added safety. If every health unit will endeavour to have a few of these cottages available for use with certain cases, the sum total of these efforts should be reflected in a diminishing death rate over the State. With the sympathetic support of the county relief administrator in such a program it is felt that with the free labour available, many of these cottages might be built over the State. In one county the health officer, working in close unison with the relief administrator, was able to procure \$626.92 for material and \$775.00 in labour for the erection of ten Burr cottages. The various civic bodies oftentimes are eager to contribute both in time and money to such a worthy program.

Every County Health Officer should at least make some effort along this line.

BUREAU OF PREVENTABLE DISEASE CONTROL

D. G. Gill, M. D., Director

ACCIDENTS OF ANTIRABIES TREATMENT

The occurrence of a case of paralysis following the administration of antirabies vaccine has just been reported in this State and calls attention to the fact that such accidents do occur. Fortunately these accidents are rare, but at the Rabies Conference in 1927 statistics were presented to show that one might expect 0.28 accidents per 1,000 treatments administered.

The clinical picture of these cases varies widely, but may belong to one of three main groups: (1) simple localized paralysis from involvement of peripheral nerves, (2) sub-acute forms of dorso-lumbar myelitis, (3) Landry's acute ascending paralysis. This third group is the most serious and has a mortality of about 30 per cent. The case reported fell into this classification.

Stuart and Krikorian¹ in an exhaustive paper on this subject state:

"In the lighter neuritic forms the clinical picture is often that of a monolateral or bilateral facial

palsy. Cases of greater intensity may show, in addition to peripheral nerve affections, paresis of the limbs and perhaps involvement of the bladder. Other cranial nerves liable to be attacked are the oculo-motor, abducens, glosso-pharyngeal, pneumogastric, and hypoglossal. This type is encountered most frequently towards the end of or after treatment; recovery is rapid, persistence exceptional. In more serious cases the paresis complained of one day has become complete paralysis the next; the patient is confined to bed; he suffers acutely from pains of the darting and girde variety; there is retention of urine and feces. After a few days, movement is restored to the lower limbs, the sphincters gradually recover tone, and within a month recovery is complete. Mortality rate is about 5 per cent.

"In the gravest cases—paralysis of the Landry type—the condition is ushered in by headache, pyrexia, vomiting and intense backache. Paresis followed by paralysis ensues, and, starting in the lower extremities, extends upwards to the muscles of the neck and face, the muscles of articulation, deglutition and respiration being finally involved. Soon symptoms begin to abate and disappear in inverse order to their appearance. Recovery is often complete in a few days, and, even if somewhat delayed, takes place as a rule earlier than the dorso-lumbar type. Mortality, however, in the Landry type, is 30 per cent".

These same authors have found that:

(1) Children are much less liable to paralysis than adults.

(2) Males are more usually affected.

(3) The white race is more susceptible than natives of tropical countries.

(4) A preponderance of cases amongst those engaged in intellectual pursuits as compared with manual laborers.

(5) No seasonal or yearly variation.

(6) The question as to whether a person has been bitten by a rabid or a healthy animal or not bitten at all would not appear to be of importance. The treatment is the one common factor.

Theories as to the cause of these cases of paralysis vary from blaming the street virus, fixed virus, or a rabies toxin to an enzyme action, accidental bacterial infection, anaphylactic phenomenon or to a poison in normal nerve substance. The similarity of the symptoms and of the pathological lesion to the acute disseminated sclerosis occasionally found complicating smallpox, measles, poliomyelitis, encephalitis lethargica, and to post-vaccinal encephalitis and myelitis has been noted. Similar clinical entities have followed the administration of tetanus serum. Probably the conclusion of Stuart and Krikorian, "in the basic

1. Stuart G., and Krikorian, K. D.: Neuro-paralytic accidents of antirabies treatment, *Ann. Trop. Med.* 22: 327-377, Nov. '28.

nerve substance of all antirabies vaccines there seems to exist some deleterious component which, although adversely affected by various physical and chemical agencies, is still capable in peculiarly susceptible individuals of producing neuro-paralytic disorders," is the most generally accepted view.

Here in Alabama we have been fortunate in not having more cases of paralysis. In 1932 there were issued 3,676 treatments, and in 1933, 3,518. Already during the first six months of 1934 over 3,000 treatments have been issued. A person bitten should undoubtedly receive treatment, but the possibility of a serious result should be considered before giving the vaccine indiscriminately. Moptah and Nabih² report eight fatal accidents in Egypt after a long period of freedom from trouble and a similar experience could occur any place.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

USE OF DOMESTIC INSECTICIDES IN MALARIA CONTROL

The use of insecticidal sprays and powders for killing flies and mosquitoes in the home has wide application in Alabama. Very often guns and cans of spray will be found in the homes of rural dwellers in the most humble circumstances. While the spraying is most often directed at the extermination of insects, on account of their being a nuisance, it undoubtedly has practical value in lessening the incidence of certain diseases borne by flies and mosquitoes.

There are many good insecticides on the market. A thoroughly effective home-made preparation can be had at very little cost. The formula is given herewith:

1 gallon of mineral spirits (a fluid used in garment cleaning), or kerosene—(if kerosene is used, fire hazard is increased)

1 pound of fresh pyrethrum powder, commercially known as insect powder

¼ pound of flake naphthalene or crushed moth balls

These ingredients should be mixed together thoroughly and permitted to stand 72 hours, when the settled liquid may be poured off or strained through a cloth. It is then ready for immediate use in a spray gun. To be most effective the spray should be broken up into

a fine mist and directed toward the ceiling. All doors and windows should be closed before spraying and kept closed for at least 30 minutes thereafter.

In malaria control work spraying should be carried out daily preferably in the early morning, or before dusk. The malaria bearing mosquito, feeding only at night, takes a position on the walls and ceilings where it rests during the day. It is particularly susceptible to killing by a spray.

The use of insecticidal sprays is of undoubted value in the control of malaria and should be urged as a supplementary measure by health workers.

CURRENT STATISTICS *PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	April	May	Estimated Expectancy May
Typhoid	19	20	44
Typhus	7	11	3
Malaria	125	198	142
Smallpox	2	0	52
Measles	3284	2799	554
Scarlet fever	28	28	38
Whooping cough	388	243	178
Diphtheria	58	30	38
Influenza	200	149	171
Mumps	159	110	108
Poliomyelitis	0	1	3
Encephalitis	5	1	3
Chickenpox	196	128	156
Tetanus	1	2	3
Tuberculosis	260	281	339
Pellagra	36	29	113
Meningitis	4	10	7
Pneumonia	389	254	242
Syphilis (private cases)	241	268	172
Chancroid (private cases)	12	4	9
Gonorrhea (private cases)	179	183	177
Ophthalmia neonatorum	1	0	2
Trachoma	0	0	1
Tularemia	3	3	0
Undulant fever	0	1	3
Dengue	0	0	0
Amebic dysentery	2	2	0
Rabies—Human cases	0	1	0
Positive animal heads	100	115	

	May	June	June
Typhoid	20	63	99
Typhus	11	18	6
Malaria	198	383	279
Smallpox	0	1	46
Measles	2799	1393	241
Scarlet fever	28	26	35
Whooping cough	243	241	195
Diphtheria	30	50	37
Influenza	149	48	52
Mumps	110	41	59
Poliomyelitis	1	5	4
Encephalitis	1	2	4
Chickenpox	128	43	65
Tetanus	2	4	4
Tuberculosis	281	268	444
Pellagra	29	82	129
Meningitis	10	1	4
Pneumonia	254	117	114
Syphilis (private cases)	268	319	168
Chancroid (private cases)	4	1	6
Gonorrhea (private cases)	183	201	165
Ophthalmia neonatorum	0	2	1
Trachoma	0	0	0
Tularemia	3	0	0
Undulant fever	1	2	1
Dengue	0	0	0
Amebic dysentery	2	3	0
Rabies—Human cases	1	0	0
Positive animal heads	115	100	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

2. Moptah, S. G., and Nabih, M. S.: Upon 21 cases of rabies paralysis. Office International D'Hygiene Publique, 23: 2007-2016, Nov. '31.

PROVISIONAL MORTALITY STATISTICS

ALABAMA, APRIL 1934

CAUSES	Number of Deaths Registered April 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	April 1934	April 1933	April 1932
ALL CAUSES	1280	1017	2297	1008.9	976.6	1015.0
Typhoid fever	4	2	6	2.6	2.2	3.6
Typhus fever	3		3	1.3		
Smallpox						
Measles	45	7	52	22.8	0.9	
Scarlet fever					1.8	0.9
Whooping cough	23	16	39	17.1	5.3	5.4
Diphtheria	5	1	6	2.6	2.7	3.6
Influenza	36	34	70	30.7	34.2	60.7
Pneumonia, all forms	144	84	228	100.1	76.8	91.3
Poliomyelitis					0.9	
Tetanus	1	2	3	1.3	2.7	3.1
Tuberculosis, all forms	57	87	144	63.2	73.7	81.4
Tuberculosis, pulmonary	54	78	132	58.0	66.6	72.9
Malaria	1	4	5	2.2	1.3	3.1
Cancer, all forms	95	30	125	54.9	54.6	49.9
Diabetes mellitus	16	7	23	10.1	7.5	7.2
Pellagra	16	10	26	11.4	14.6	12.1
Cerebral hemorrhage, apoplexy	66	64	130	57.1	58.6	65.2
Diseases of heart	199	136	335	147.1	127.8	75.5
Diarrhea and enteritis						
Under 2 years	7	6	13	5.7	7.5	9.0
2 years and over	6	5	11	4.8	2.2	4.9
Nephritis	98	73	171	75.1	91.4	88.2
Puerperal state, total	20	15	35	15.4	16.0	16.2
Puerperal septicemia	5	4	9	3.9	3.1	1.3
Congenital malformations	13	2	15	6.6	7.1	4.9
Congenital debility and other diseases of early infancy	88	56	144	63.2	44.8	52.6
Senility	13	19	32	14.0	12.4	16.2
Suicides	13	3	16	7.0	6.2	7.6
Homicides	9	22	31	13.6	20.0	15.7
Accidental burns	5	5	10	4.4	5.3	4.5
Accidental drownings	1	1	2	0.9	4.0	4.5
Accidental traumatism by firearms	7	6	13	5.7	3.1	3.6
Mine accidents	2	1	3	1.3		0.9
Railroad accidents	7	4	11	4.8	4.0	1.8
Automobile accidents	23	10	33	14.5	15.5	13.5
Other external causes	31	18	49	21.5	19.1	35.1
Other specified causes	160	140	300	131.8	146.0	135.4
Ill-defined and unknown causes	66	147	213	93.6	107.9	103.0

MAY 1934

CAUSES	Number of Deaths Registered May 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	May 1934	May 1933	May 1932
ALL CAUSES	1266	1129	2395	1018.1	850.7	947.4
Typhoid fever	1	2	3	1.3	4.3	3.0
Typhus fever		1	1	0.4	0.4	
Smallpox						0.4
Measles	45	13	58	24.6	2.1	
Scarlet fever						
Whooping cough	19	21	40	17.0	6.9	9.1
Diphtheria	3	2	5	2.1	1.3	2.2
Influenza	15	22	37	15.7	24.1	31.8
Pneumonia, all forms	82	69	151	64.2	36.1	62.3
Poliomyelitis		1	1	0.4	0.4	0.4
Tetanus		1	1	0.4	2.1	2.6
Tuberculosis, all forms	68	104	172	73.1	64.4	78.4
Tuberculosis, pulmonary	65	96	161	68.4	58.9	73.1
Malaria	5	9	14	5.9	3.0	2.6
Cancer, all forms	76	44	120	51.0	49.4	54.0
Diabetes mellitus	18	9	27	11.5	6.4	7.4
Pellagra	10	15	25	10.6	10.3	11.7
Cerebral hemorrhage, apoplexy	75	78	153	65.0	55.4	55.7
Diseases of heart	217	136	353	150.0	113.8	110.6
Diarrhea and enteritis						
Under 2 years	29	27	56	23.8	20.6	18.7
2 years and over	14	9	23	9.8	5.1	9.6
Nephritis	100	86	186	79.1	74.7	86.6
Puerperal state, total	16	18	34	14.4	9.0	17.8
Puerperal septicemia	5	3	8	3.4	2.6	5.2
Congenital malformations	8	2	10	4.2	9.0	5.2

PROVISIONAL MORTALITY STATISTICS

MAY 1934—Continued

CAUSES	Number of Deaths Registered May 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	May 1934	May 1933	May 1932
Congenital debility and other diseases of early infancy	79	46	125	53.1	36.9	50.1
Senility	25	16	41	17.4	10.3	16.1
Suicides	15	4	19	8.1	7.3	12.6
Homicides	16	40	56	23.8	17.6	20.9
Accidental burns	3	3	6	2.5	3.4	3.5
Accidental drownings	1	5	6	2.5	8.2	3.5
Accidental traumatism by firearms	1	2	3	1.3	1.3	3.5
Mine accidents	3	4	7	3.0	0.9	1.7
Railroad accidents	4	4	8	3.4	4.3	3.5
Automobile accidents	25	11	36	15.3	9.0	10.0
Other external causes	28	9	37	15.7	28.3	19.2
Other specified causes	202	151	353	150.0	131.0	144.9
Ill-defined and unknown causes	63	165	228	96.9	92.8	92.3

Book Abstracts and Reviews

That Heart of Yours, by S. Calvin Smith, M. D., Sc. D. Illustrated. 212 pages. J. B. Lippincott Company, Publishers. Philadelphia, London and Montreal. 1934. Cloth \$2.00 net.

Though one might be misled by the title this volume is really a manual intended to explain to the patient with heart disease the nature of his ailment and the means whereby he can carry on certain of his activities and live with a reasonable amount of happiness. After a brief description of the function and structure of the heart, the author describes the various diseases that affect the heart in infancy, youth and middle age. He describes the signs of every heart disease, taking pains to show how often these symptoms are caused by other conditions outside the heart. He discusses in general the value of rest, exercise and diet and devotes a chapter to the psychology of the heart patient in which he tries to show how hopeful the outlook may be when physician and patient work in harmony. His general attitude toward heart disease is that the detection of an early lesion may result in a longer and happier life than would be expected by the man who is free of any symptoms. For the patient whose morale is seriously crippled by the knowledge that his heart is affected, this book should prove a source of inspiration and comfort.

C. K. W.

A Primer For Diabetic Patients: A Brief Outline of the Treatment of Diabetes with Diet and Insulin, Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions: By Russell M. Wilder, M. D., Professor and Chief of the Department of Medicine of The Mayo Foundation, University of Minnesota; Head of Section on General Metabolism, Division of Medicine, The Mayo Clinic. Fifth edition, re-set. 172 pages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth \$1.75 net.

Wilder's primer for diabetic patients is one of the briefest but at the same time one of the most practical volumes of its type on the market. Intended primarily for the patient it should prove none the less of unestimable value to the physician who must teach his diabetic patients the methods of calculating their diets and of weighing and measuring their food.

C. K. W.

Surgery of a General Practice, by Arthur E. Hertzler, M. D., Chief Surgeon, Halstead Hospital; Professor of Surgery, University of Kansas and Victor E. Chesky, M. D., Chief Resident Surgeon, Halstead Hospital. 602 pages with 472 illustrations. The C. V. Mosby Company. 1934. Cloth \$10.00 net.

The author has presented a very large amount of information in a comparatively short space. This is accomplished by an orderly arrangement and lucidly presented statements. There is a small amount of space devoted to different types of wounds and to different types of infections. The remaining portion of the book covers the diseases seen in different regions of the body. The section devoted to Jaws, Mouth and Tongue is thought to be of particular value. The diagnosis in practically every instance is clarified by well selected illustrations. No attempt is made to discuss in detail the technique relative to so-called major surgery. Minor surgical procedures are briefly but adequately discussed. There is no effort made to cover the subject of fractures. This is rather to be commended than criticized.

The chief value of the book seems to be relative to the diagnosis of conditions which are usually seen in a general practice. It is felt that the book would be a valuable addition to the library of any one who is engaged in the practice of medicine and surgery.

J. L. B.

Truth About Medicines

NEW AND NONOFFICIAL REMEDIES

Carbarsone.—Carbarsone is proposed for the treatment of intestinal amebiasis. It is administered usually by mouth; in acute amebic dysentery or in resistant cases, retention enemas may be employed. While carbarsone is said to be less toxic than acetarsone and serious untoward effects appear to be uncommon, cutaneous disturbances and other reactions common to arsenic compounds have been observed. While visual disturbances appear to be quite rare, the possibility of their occurrence should be kept in mind. Excretion of the arsenic is relatively slow; suitable rest periods must therefore be interposed in the treatment to prevent cumulative effects. In view of the frequency of persistent infection in the absence of marked symptoms, adequate therapy includes re-examinations and repetitions of courses of treatment. The usual oral dosage for adults is 0.25 Gm. twice a day for ten days. As retention enemas, for adults, 2 Gm. dissolved in 200 cc. of warm 2 per cent sodium bicarbonate solution may be administered following a cleansing alkaline enema every other night for a maximum of five doses, if necessary. Because of the large dosage employed oral administra-

tion should be interrupted during this interval. Carbarsone is supplied in vials containing 2 Gm. and in pulvules (capsules) containing 0.25 Gm. The name is trademarked but the firm disclaims proprietary rights. Eli Lilly & Company, Indianapolis. (Jour. A. M. A., July 28, 1934, p. 259.)

Carbarsone.—Along with its announcement of the acceptance of carbarsone for inclusion in New and Nonofficial Remedies, the Council on Pharmacy and Chemistry issues a report reviewing much of the clinical work with Carbarsone. The Council's report concludes: It appears that carbarsone is a valuable addition to the anti-amebic armamentarium. It must be considered, however, that not a few patients are resistant to this agent as well as to other amebicidal drugs, and that while toxic reactions appear to be uncommon, a few serious accidents have occurred after administration of the usual therapeutic doses of carbarsone. The individual susceptibility to arsenic compounds of each patient must be evaluated and evidences of toxic manifestations must be watched for carefully, both during the period of therapy and, in view of the slow excretion of the administered arsenic, for a reasonable time afterward. (Jour. A. M. A., July 28, 1934, p. 258.)

PROPAGANDA FOR REFORM

What Can the General Practitioner Expect from Infra-Red Therapy? The Council on Physical Therapy reports that the generators of infra-red or thermal radiation usually consist of a concave reflector at the focus of which is a heating element. From the sources considered (electric bulbs and resistance coils), the penetration of heat into the tissues is never great under therapeutic conditions. Therapeutic indications for the use of heat locally are chiefly in the following fields: surgery, following fractures, dislocations, sprains, cicatrices after operating procedures, arthritis when a limited influence on the joints is desired, myositis, neuritis, and circulatory disturbances of the extremities, neuralgia, chronic diseases of the nervous system, traumatic synovitis and tenosynovitis, contusions and muscle sprains, bursitis, stiff joints, chronic backache. The report of the Council on Physical Therapy contains a

discussion of the treatment of these various conditions. (Jour. A. M. A., July 7, 1934, p. 27.)

Tolerances for Arsenic, Copper and Lead in Foods.—The Committee on Foods reports that foods to be eligible for acceptance shall not contain arsenic, copper or lead by contamination in excess of the tolerances established by the United States Department of Agriculture: (a) 1.06 parts of arsenic (as As) per million of food [1.4 parts of arsenic (as As_2O_3) per million of food]. (b) 30 parts of copper (as Cu) per million of food. (c) 2 parts of lead (as Pb) per million of food. (Jour. A. M. A., July 7, 1934, p. 29.)

Sweets in the Diet, Especially of Children.—The Committee on Foods reports that although sweets are wholesome and valuable foods when given their proper place in the balanced diet, they contribute few or none of the structural components required for good nutrition. Common concentrated sweets used to excess are harmful, especially in the case of children, so far as they impair the appetite for other highly necessary foods and lead to a reduced intake of milk, eggs, fruits, vegetables, meat and cereals. Food advertising that obscures the facts of good nutrition should be condemned. (Jour. A. M. A., July 14, 1934, p. 110.)

Acidosis Claims in Lay Advertising.—The Committee on Foods reports that acidosis is a medical name for a morbid condition of diminution in the reserve supply of fixed alkali in the blood and body fluids. Most people are quite likely to confuse it with gastric hyperacidity or "acid stomach," or to conceive of it as "acid blood," a condition which would be incompatible with life. Since the term "acidosis" is so little understood the Committee on Foods feels that its use in any advertising except that restricted to the medical profession is misleading and consequently disapproved. (Jour. A. M. A., July 21, 1934, p. 189.)

Vitamin E Claims for Public Advertising.—The Committee on Foods reports that statements or claims referring to vitamin E in advertising to the public imply a need for special sources of the vitamin that is not

warranted by present knowledge. Claims for vitamin E, therefore, other than mere statement of its presence, should not be used on food labels or in advertising to the public. (Jour. A. M. A., July 21, 1934, p. 189.)

Vitamin Fortification of Foods.—The Committee on Foods reports that there is no convincing evidence that vitamin fortification of foods generally serves any public necessity or that it is in the best interest of public welfare; therefore, such practice is not to be encouraged. Tentatively, however, no objection is taken to the reasonable fortification of food products, whether intended for special diets, convalescents or general use, with vitamin concentrates or with natural foods rich in vitamins. (Jour. A. M. A., July 21, 1934, p. 189.)

Serum Therapy in Poliomyelitis.—Notwithstanding the total failure of statistical presentations to make a case for serum therapy in this disease, clinical observations almost universally indicate rapid symptomatic response to serum administration. There seems to be an immediate drop in temperature and improvement in symptoms that cannot be totally disregarded. These clinical results have been shown equally after both normal adult serum and convalescent serum, so that there seems to be little preference between these two types of serum. Reports on the use of serum for passive protection in epidemics are inconclusive. It will be difficult to evaluate the efficacy of a prophylactic agent in poliomyelitis on account of the low attack rate even in epidemics, and because there is no method of defining the susceptible group. More data and observation are needed before the final opinion can be given as to the value of serum treatment and prophylaxis in poliomyelitis. (Jour. A. M. A., July 28, 1934, p. 262.)

A Poliomyelitis Vaccine.—A vaccine that seems to possess the likelihood of efficacy in the diagnosis and treatment of poliomyelitis is at present undergoing development in the Laboratories of the Department of Health of the City of New York. Influenced by the earlier work and also by the favorable results recently obtained with antigens inactivated by germicides in the

prevention of other virus diseases, investigators have attempted to develop a new antigen against poliomyelitis. Using extraordinary precautions, the group in charge of these investigations decided to test out the antigenic properties on themselves before attempting inoculation of children with the antigen. Several members of the research group were injected with a vaccine prepared by adding formaldehyde to a suspension of material from the infected spinal cord. It is proposed, after testing the blood of those who have been inoculated to determine the extent of the immunity developed, to carry the investigations further, inoculating children against this disease. The vaccine will, of course, have been established as absolutely harmless by the injection into the members of the committee and also as to its efficacy by the studies that have been made on monkeys inoculated with virus following inoculation with the vaccine. (Jour. A. M. A., July 28, 1934, p. 264.)

Trichlorethylene and Asthma.—The vapor of trichlorethylene, like vapors of all other noxious materials, may aggravate bronchial asthma. However, it appears not to be the cause of attacks, as no cases have ever been reported as definitely due to this agent. It merely acts like the fumes of coal gas, sulphur and other chemicals by making the asthma worse than it would otherwise be. (Jour. A. M. A., July 28, 1934, p. 279.)

Cypress Oil.—N. N. R. and Oil of Cypress—Schimmel and Co. Omitted from N. N. R. —Cypress Oil, with the accepted brand, Oil of Cypress—Schimmel and Co. (Fritzsche Bros., Inc., distributor) was first included in New and Nonofficial Remedies in 1912 as a palliative preparation for use in whooping cough. The Council on Pharmacy and Chemistry has reviewed the evidence for the usefulness of the product. There appears to be little or no recognition of Cypress Oil in American or English books of pharmacology. In the light of these considerations the Council concluded that there is no good reason for the continued inclusion of Cypress Oil in New and Nonofficial Remedies and voted to omit it with the accepted brand. (Jour. A. M. A., April 7, 1934, p. 1154.)

ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following products have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices:

Arizon.—The Arizon is an electrically heated vapor inhalator recommended as an adjunct in the treatment of nasal or respiratory disturbances and for inhalations of vapor or medicated vapor as prescribed by the physician. A tight mask with compensating valves fits over the nose and mouth. A flexible breathing tube serves as a connection between the mask and the vapor chamber. Ventilators are drilled in the base of the instrument so that free ingress of air is available for inspiration. The treatment consists simply of normal breathing. Detroit Cover Company, 3420 West Fort St., Detroit. (J. A. M. A., May 5, '34, p. 1472.)

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THE ETIOLOGY AND SYMPTOMATOLOGY OF PEPTIC ULCER*

By

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There has been a great deal of interest manifested in peptic ulcer since attention was first directed to it by Cruveilhier more than a century ago. The study of this gastric disease was given further impetus by the more detailed description offered from the pen of Rokitansky. There have been many and varied theories and hypotheses as to its etiology and pathogenesis. Almost every variety of gastro-intestinal discomfort has been denominated as a symptom; unfortunately all the protean features of indigestion and dyspepsia have too frequently been considered synonymous with peptic ulcer. I am inclined to agree with the attitude that peptic ulcer is a common clinical diagnosis but a comparatively rare pathologic entity, rare when compared with the amount of indigestion and dyspepsia arising from other causes.

From the maze of theory, speculation and investigation, we can salvage a few facts and some very interesting suggestions relating to the etiology and pathogenesis of peptic ulcer. In the first place, both duodenal ulcer and gastric ulcer are commonest in the areas where peptic digestion is most active—the pyloric end of the stomach and the first portion of the duodenum. The fact that peptic ulcer is more common in the duodenum than in the stomach, in a ratio variously estimated at from 4 to 1 up to 8 to 1, is probably due to the lesser defense of the duodenal mucosa to acid chyme. The pathogenetic sequence is a local reduction

or loss of circulation in the mucosa, followed by failure of the mucosal protective mechanism against peptic digestion, with consequent loss of tissue and ulcer formation. Therefore the etiology of peptic ulcer resolves itself into those factors that bring about a situation favorable for ulcer production by the agency ever at hand—peptic digestion. Another condition favoring the causation of ulcer and interfering with healing, assisting in the production of pain and almost always present, is muscular hyperactivity of the stomach, especially pylorospasm. Hyperacidity is usually found but is not absolutely essential in the ulcer-producing mechanism.

We must now get into the field of speculation. Peptic ulcer is placed by statistics as most common in middle age, in the two decades from 30 to 50. It is considered more common in men than in women, which statement will be referred to again. It is almost universally associated with bad dietary habits, sinus and oral sepsis, and diseased tonsils; but so are most of the ills to which modern man is heir. There is an astonishingly close relationship between appendicitis, cholecystitis and peptic ulcer; the peptic ulcer is probably the result of the first two causing peritoneal irritation with consequent gastric hypersecretion and hypermotility.

In a vague indefinite way, nervous influences have been given a prominent speculative position. More definitely, Danzer¹ suggested in 1929 that peptic ulcer is not a local disease of the stomach but that it is a general systemic disturbance with local manifestations in the stomach. He considers this to be a capillary stasis of the gastric mucosa, permitting the ulcer-product-

*Part 1 of a symposium on peptic ulcer, presented to the Association in annual session, Birmingham, April 17, 1934.

1. Danzer, C. S.: Fundamental factors in pathogenesis and treatment of peptic ulcer, *South. M. J.* 22: 178-184, Feb. '29.

ing mechanism to operate. He further believes that for the development of this condition an hereditary or constitutional anlage of the circulation of the stomach is a *sine qua non*; all other causes he lists as merely exciting. Danzer has come, in all probability, nearest to the etiologic solution in most cases of peptic ulcer.

Modern medicine in its broader phases requires that we give careful study to the constitution or idiosyncrasy of the phenotype or realized adult. In this way only can we gain a full understanding of the reactions of many patients and the relation of these to the diseases that they present. This is nowhere more noticeable than in the study of diseases of the digestive tract. A careful observation of ulcer cases brings one more and more toward the conviction that most of them fit into a general constitutional type. We can give this no better name than the hyperkinetic type—the individual of excessive energy discharge and excessive motion in both the voluntary and in the vegetative spheres. This is the dynamic personality that lives a tumultuous centrifugal existence; it is one who drives through life, giving little or no thought to physical and physiological conservation, breaking the rules of hygiene and taking no time to repair physical damage. This phenotype shows the hyperkinesia through the autonomic division of the vegetative nervous system, bringing about the triad for ulcer production, namely, gastric hypermotility, gastric hypersecretion and arteriolar spasm—with or without an early arterial sclerosis of the arterio-capillary fibrotic type. This type is either purely hereditary-constitutional or may have a component of glandular dysfunction, in either instance exaggerated by environmental influences,—the stress and strain of living.

The foregoing is offered as a profoundly important etiologic factor in peptic ulcer. It explains why it is most common in the decades between 30 and 50, why it is more common in American men than in American women when compared to the lack of disproportion in its incidence in the two sexes in Germany. To my mind it explains why duodenal ulcer is more common than ulcer further back in the stomach. Furthermore it explains the vast majority of

peptic ulcers, the remaining ones falling into the category of embolic or thrombotic accidents and those associated with appendicitis and cholecystitis. We have on several occasions had such hyperkinetic individuals develop peptic ulcer while under observation. And lastly, no form of management, medical or surgical, is capable of giving best results unless this matter of constitution is given fullest recognition with therapeutic direction thereto.

Peptic ulcer may occur without symptoms until complicated by perforation or hemorrhage; ulcers in progress or healed are found at autopsy where no attention had been directed to the stomach in life. Again the symptoms may be those of vague and even mild digestive disturbance and yet a severe sequel enter into the picture. The symptoms that should suggest ulcer are pain and vomiting, and, especially in duodenal ulcer, periodicity and hemorrhage. The significant features of ulcer pain are its appearance a variable time after food, according to location of ulcer, relief by food or alkali or when stomach is empty; altered by effort or change of position and tendency to recur in the same place. With the pain are often present localized areas of tenderness anteriorly, posteriorly or both. Vomiting is a common symptom but is often absent; the vomitus may be composed of only highly acid food; it may contain blood in minute quantities (occult blood), or the blood may be in large amounts, bright red or partially digested (coffee-ground); or the vomiting may be a pure hematemesis. Without vomiting the blood may appear as black or "tarry" stools; or it can be present as occult blood in stools after the patient has been on a hemoglobin-free diet for several days.

Periodicity is more characteristic of duodenal than gastric ulcer. However, intervals of freedom from distress are common in both. This may be due to variations in healing; or in gastric ulcer it may relate more directly to dietary indiscretions.

Perforation may be ushered in without warning or following some unusual effort. Severe abdominal pain, rigidity of abdominal muscles, marked tenderness on pressure, distention, vomiting and shock indicate perforation into the abdominal cavity and call for immediate surgical intervention.

When localized peritonitis has first caused adhesions, the perforation may cause a localized abscess; the symptoms vary according to location in the upper abdomen; in many instances these abscesses contain air. The perforation may be into a portion of the intestine and it has entered the left pleural cavity.

Pyloric stenosis is not an infrequent sequel to peptic ulcer. It is suggested by increasing degree of cramp-like pains and later by attacks of vomiting, the vomitus being of large quantity and containing particles of food that may have remained in the stomach for several days.

In this presentation, reference only will be made to acute fissure in the stomach with hemorrhage as the sole manifestation; these may or may not recur.

Furthermore, gastric cancer is passed without discussion; since I believe there is no practical relationship between peptic ulcer and cancer, malignant ulcerations being malignant from inception and ulcerating secondarily.

Finally, I wish to emphasize that, in the diagnosis of peptic ulcer before complications clarify the picture, the one most important procedure is an x-ray examination made with meticulous care and caution by a well trained and experienced roentgenologist with adequate modern x-ray equipment.

X-RAY DIAGNOSIS OF PEPTIC ULCER*

By
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The development of roentgenologic diagnosis of the gastric ulcer has been a succession of orderly events. Hameter's attempt to visualize the gastric mucosa by the introduction of a bag filled with a solution of lead and to visualize the site of an ulcer by the adherence of a fleck of bismuth was not so far beside the mark. These experiments, though unsuccessful, were the beginning and from these have evolved our present day knowledge of this subject. With the advent of the Reider meal, secondary mani-

festations of gastric ulcers were demonstrated. Then Reiche demonstrated the cavity of an ulcer. With additional experience, intrinsic lesions were differentiated from gastric phenomena produced by extrinsic causes.

The study of the stomach developed so rapidly that it has become one of the most important branches of x-ray work and so reliable that, in the hands of an experienced radiologist, the diagnostic error is extremely small.

There are two common methods of x-ray study of the stomach: in one, serial roentgenograms are used alone; in the other the fluoroscope and roentgenograms are used together. Both methods have proven very efficient in certain hands. In the serial roentgenographic examination, a large number of films are made in different positions. In the combined method the fluoroscopic examination is followed by plates made of suspicious areas. The roentgenograms are made on the fluoroscopic table when the different regions are brought into view. We use the latter method, partially because the cost of a series of 10 to 20 films is often prohibitive, but largely because we prefer the other method.

In fluoroscopying a stomach, it is essential that enough current be used to produce a clear image on the screen in the oblique as well as the anterior-posterior position. Else the niche of an ulcer may easily be missed.

The preparation of the patient for the examination is very important. The examination should be done only after an overnight fast without catharsis; occasionally, then, some food residue may be present or, following the expulsion of a test meal, some of the meal may remain or mucus may be present in the stomach, which will blur the fluoroscopic image or may obliterate the ulcer crater. In these cases the examination must be repeated since, with their removal, a very definite lesion may be demonstrated.

It cannot be said too frequently that x-ray study of the stomach is time consuming and that a hurried fluoroscopic examination and a few haphazardly made films are insufficient evidence on which to base sound conclusions. Just a word about the type of meal might be worth while. The

*Part 2 of a symposium on peptic ulcer, presented to the Association in annual session, Birmingham, April 17, 1934.

important thing is a mixture containing enough barium in suspension to cast a good shadow and not too viscid to enter any small crater. We never give more than ten ounces of the mixture, believing this to be a sufficient amount and that overdistention might obliterate a superficial lesion.

The direct roentgen signs of ulcer are:

1. Niche
2. Filling defect
3. Accessory pocket
4. Incisura

There are corroborative signs: spastic manifestations, retention, alterations of peristalsis, gastric hypotonus, fish-hook type stomach, etc.

The niche consists of a constant localized projection from the lumen of the stomach representing the crater of the ulcer filled with the opaque material and is characteristic of a penetrating ulcer. It is most commonly seen on the lesser curvature or the adjacent posterior or anterior wall and when on the posterior or anterior wall can only be visualized in one of the oblique positions. The outline of the niche is smooth and there is no constriction at the visceral lumen. It may vary in size from the smallest projection which can be recognized to one-half to three-fourths of an inch in diameter. These larger craters always suggest malignancy.

Surrounding the crater of an ulcer is a localized oval depression of the gastric outline, the filling defect. The outline is smooth and the defect is usually shallow as contrasted with the nodular filling defect of carcinoma. This deformity is produced by the inflammatory induration surrounding the ulcer. This is sometimes the only recognizable abnormality in ulcers, especially on the anterior and posterior wall. However, in most instances, if the patient is rotated, the crater will be demonstrated in some position, especially if compression is used.

The incisura which is produced by the contraction of the circular muscle fibers is seen on the greater curvature opposite the ulcer. It may be shallow or so deep that some distance of the gastric lumen may be obliterated. These must not be confused with spasmodic manifestations which are transitory.

Accessory pockets represent extensions of the lesion into the extra-gastric tissue. A large projection is seen connected to the lumen of the stomach by a contracted neck. The projection is rounded in shape; the accessory pocket sometimes contains a bubble of gas so that a fluid level can be seen. These will usually remain when the stomach is completely empty.

There may be ulcers which should be diagnosed without the presence of one or all of these findings, but usually one is present and the more found the more certain is the diagnosis. Without them a diagnosis cannot be made with certainty. In very early ulcers, where there has not been time for the erosion to extend sufficiently deep into the mucosa to make possible the demonstration of a niche, the filling defect may be of assistance in the clinical diagnosis; or in healed ulcers, where the crater is replaced by scarring, the grouping of the mucosal folds converging toward the filling defect may be of great value.

The corroborative signs serve only to demand a more careful search for the direct signs without which only a negative diagnosis can be made. The corroborative signs may be produced by a number of conditions, some of which are far removed from the stomach.

The radiologist's problem is not over when a diagnosis of gastric ulcer is made. The study of the progress of the ulcer is frequently of great value. Especially is he called on, in lesions near the pylorus, to determine the amount of obstruction that is produced in the healing process. The differentiation of benign from malignant ulcers is not very difficult usually. A penetrating ulcer, in which a niche and incisura can be demonstrated, in no way simulates a well developed cancer; but between the typical ulcer and typical cancer there is a small per cent of lesions in which differentiation is difficult or impossible. Very large craters are always suggestive of cancer. The differentiation is more difficult near the pylorus where it is sometimes advisable to report a lesion and allow the differentiation to be made in the operating room.

A discussion of x-ray diagnosis of ulcers would be incomplete without mention of the dangers associated with bleeding perforating ulcers. It should be sufficient

to say that no bleeding ulcer should undergo an x-ray examination. Not only is manipulation of the stomach, necessary for proper study, liable to produce more hemorrhage or complete a perforation, but frequently a diagnosis cannot be made because of blood clots which so confuse the findings that no conclusions can be drawn. There have been a number of cases reported where perforation has taken place in a few hours following x-ray study. In these cases the examiner has made unusual pressure in his examination or the history was that of extreme symptoms preceding the x-ray study. In these cases where preperforation is suspected, less barium should be used and manipulation should be reduced to the minimum or, better still, the examination should be delayed for a few days.

Because of recent increased interest in the postoperative stomach and because of its close relation to gastric ulcer, we feel it has a place in such a discussion as this for two reasons: (1) the radiologist can frequently prognosticate the clinical results to be obtained; and (2) he can point out to the surgeon the cause for some of the poor results following operative treatment for gastric ulcers. The postoperative stomach may present various appearances, depending on the surgery done, but there are some characteristics common to all in which good results are obtained. It is unusually small, higher and more transverse, the peristalsis is less active and emptying time is more rapid than before operation.

Probably the most common error in surgical cases where a new opening is made, usually a gastro-enterostomy, is that the stoma is too high to allow free drainage or is not of sufficient caliber. In the obstructed stomach of some standing with marked dilatation during shrinkage which follows the operation, the stoma will be diminished in size and will be carried upward and to the left, thus preventing necessary drainage. Other causes of failure, of course, are too long a loop in the gut, producing a vicious cycle. Although it is not known that poor mechanical results are the cause of formation of new ulcers, nevertheless the two are sometimes associated. We would recommend the work of Carty, Weintraub and Felter to those who are interested in this phase of the subject.

CONCLUSIONS

1. X-ray is the most accurate method of diagnosing gastric ulcers.
2. The best work is done when there is the proper cooperation between the roentgenologist and the clinician.
3. X-ray study should be a part of the follow-up of postoperative gastric ulcer because it gives important information as to prognosis and can aid the surgeon in preventing postoperative complications.

DIETARY AND MEDICAL MANAGEMENT OF PEPTIC ULCER*

By
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Perhaps the most important consideration in curing gastric and duodenal ulcers is an early diagnosis; because, if an ulcer is recognized in its incipency, the treatment is simpler and more effective.¹ It unquestionably is true that many ulcers heal spontaneously; and many more ulcers, that become chronic, would heal with a little help. In the earlier years of ulcer the patient may often be cured by ambulatory treatment, without any interference with the duties of his vocation; whereas, in the old cases prolonged treatment is necessary. (Alvarez.)²

Another important reason for the early diagnosis of gastric or duodenal ulcer is that it permits the removal of the focal infection causing the ulcer, whether it be the teeth, tonsils, appendix or gallbladder, which, if it continues to exist, also may cause arteriosclerosis, nephritis, acidosis or other serious conditions that are known to result from pyogenic infection in any part of the body.³ I have been impressed with the frequency of nephritis, arteriosclerosis, pancreatitis and acidosis in the neglected cases of ulcer of the stomach or duodenum. In other words, it appears that the ulcer it-

*Part 3 of a symposium on peptic ulcer, presented to the Association in annual session, Birmingham, April 17, 1934.

1. Harris, Seale: Discussion in symposium on treatment of gastric and duodenal ulcer, *J. A. M. A.* 79: No. 1, July 1, '22.

2. Alvarez, W. C.: Practical treatment of duodenal ulcer, *J. A. M. A.* 87: 2086-2089, Dec. 18, '26.

3. Harris, S.: Early diagnosis of gastric and duodenal ulcers, *South. M. J.* 14: 854, Nov. '21.

self is the focal infection which causes many other diseases, and this infection in turn adds to the seriousness of the gastric or duodenal ulcer. I have seen a number of ulcer patients who had albumin and casts in their urine which promptly disappeared, not to return with the cure of the ulcer.

The early diagnosis of ulcer of the stomach or duodenum is of as much importance to the patient as the early diagnosis of tuberculosis, because if treated properly before chronic inflammatory changes have continued too long, the ulcer heals with but a slight cicatrix and the cure is apt to be permanent; whereas, in the old neglected cases it is much more difficult for the ulcer to heal, and recurrences and complications like hemorrhage and perforations are more frequent. The same dictum that applies to suspected tuberculosis should hold in suspected ulcer, viz., the case should be treated as if a positive diagnosis were made. The early diagnosis and cure of gastric ulcers also prevent many cancers that may be engrafted on chronically inflamed ulcer tissue.

In outlining the dietary and medical management of peptic ulcer no attempt will be made to review the literature on the many methods of treatment that have been followed and that are now used by various clinicians. Indeed, medical literature is so plethoric with articles on the treatment of gastric and duodenal ulcers that even a brief mention of the more recently proposed methods would consume more than the time allotted to me in this excellently arranged symposium. Only the methods which I personally use, and for which little claim of originality is made, will be discussed.

Representatives of some food or pharmaceutical manufacturer come to my office frequently with samples of, and literature on, the product which he is paid to sell. His carefully rehearsed story is listened to attentively, but a physician should not be influenced in treating his patients by the claims of manufacturers of proprietary foods and medicines, particularly if his methods of treating a disease give satisfactory results. In thirty years of specializing in gastro-enterology, I have seen the rise and fall of many diets and therapeutic measures that have been devised for the treat-

ment of gastric ulcers; but the Lenhartz⁴ diet, or its modifications, and a few simple United States Pharmacopeia drugs have stood the test of time. My remarks will be confined to the dietary methods and medicines which have given satisfactory results, and which I believe may be regarded almost as the standard treatment for peptic ulcer. (Aaron,⁵ Rehfuss,⁶ Crohn.⁷)

Lenhartz deserves the credit for first feeding ulcer patients in 1900; and his original diet, while modified and improved by a number of clinicians including the Sippy⁸ diet and my modification,⁹ is still the basis for most of the diets that have been popularized by various clinicians. The researches on vitamins by McCollum,¹⁰ McCarrison,¹¹ Barnett Sure,¹² and other nutritionists have placed at the disposal of the medical profession most valuable information regarding foods which increase resistance to infections that has been used to improve our original modification of the Lenhartz diet.¹³ Undoubtedly a deficiency of vitamins in the diet of the American people is partly responsible for the increase in the incidence of ulcer;¹⁴ and the recognition of this fact has given better results in its treatment.¹⁵ The fact remains that no

4. Friedenwald-Rurah: Diet in Health and Disease, Philadelphia, W. B. Saunders Company, p. 449.

5. Aaron: Diseases of the Digestive Organs, Philadelphia, Lea & Febiger, p. 423, 1915.

6. Rehfuss, Martin E.: The Diagnosis and Treatment of Diseases of the Stomach, Philadelphia, W. B. Saunders Company, pp. 618-691.

7. Crohn, Burrill B.: Affections of the Stomach, Philadelphia, W. B. Saunders Company, pp. 692-758, 1927.

8. Sippy, Bertram W.: Musser and Kelly's Practical Treatment, Philadelphia, W. B. Saunders Company, 3: 336, 1912.

9. Harris, S.: Dietetic and medical treatment of gastric and duodenal ulcers, J. Tennessee M. A. 13: 247, Nov. '20.

10. McCollum and Simonds: Food, Nutrition and Health, published by the authors.

11. McCarrison, R.: Faulty food in relation to gastro-intestinal disorder, J. A. M. A. 78: 1-8, Jan. 7, '22; also in Lancet 1: 207-212, Feb. 4, '22.

12. Sure, Barnett: Vitamins in Health and Disease, Baltimore, Williams & Wilkins, 188, 1933.

13. Harris, S.: Medical treatment of gastric and duodenal ulcers, South. M. J. 9: 960-971, Nov. '16.

14. Harris, S.: Sugar-saturated, vitamin-starved America, Am. Med. 23: 837-844, Nov. '28.

15. Harris, S.: Role of vitamins in etiology and cure of gastric and duodenal ulcers, Tr. Sect. Gastro-Enterol. & Proct., A. M. A. pp. 72-86, '28.

one diet will meet the needs of every ulcer patient, but each case must be dieted as an individual.¹⁶

The drug therapy of ulcer now in vogue today comes largely from Ewald, Conheim and other German gastro-enterologists; while Sippy's alkalization method⁸ is a valuable contribution to ulcer therapy when hyperchlorhydria has been proved to exist.

AMBULATORY TREATMENT OF GASTRIC AND DUODENAL ULCERS

While it is best for any ulcer patient to have three weeks rest in bed, preferably in a hospital in which dietary methods can be carried out properly, many patients cannot afford to stop work; and the next best thing, i. e., the ambulatory treatment, may be tried. Undoubtedly many ulcer cases may be cured while the patient continues the duties of his vocation; and if the symptoms are mild and have existed for only a short time, the ambulatory treatment may be the method of choice. However, in the old neglected cases, in which symptoms are severe, such as intense pain, nausea and vomiting, or in which there have been complications, as hemorrhage or perforation, there is little hope of permanent results from the ambulatory treatment of gastric and duodenal ulcers.

There can be no one diet that conforms to the nutritional needs of all ambulatory ulcer patients any more than there should be a routine diet for the hospitalized ulcer patient. The laborer with a gastric or duodenal ulcer who performs hard manual work must have sufficient food to carry on his daily duties while undergoing ambulatory treatment; so that he should have more food than the white collar ulcer patient who lives the sedentary life of an office worker.

In young adults in which ulcer symptoms have existed for only a few months, or even a few years, in carrying out the ambulatory treatment it may be sufficient to allow the patient three small meals a day with a glass of milk three hours after meals, and, if awake, at night. Coarse vegetables, tough

meats and irritating condiments should be interdicted.

Small doses (10 grains) of strontium bromide combined with tincture of belladonna (15 drops), given about fifteen minutes before eating, usually will prevent pylorospasm, reduce hyperchlorhydria and shorten the emptying period of the stomach. The strontium bromide is discontinued after two or three weeks, but the tincture of belladonna in doses just short of producing its physiologic effect (15 to 25 drops) should be continued for two or three months.

A level teaspoonful of calcium carbonate stirred in one-half glass of water one-half hour after each feeding will aid in neutralizing the stomach contents. One-half to one teaspoonful doses of a powder containing equal parts of bismuth subcarbonate and heavy oxide of magnesia given one-half hour before breakfast, and if necessary at bedtime, will neutralize the hydrochloric acid in the fasting stomach and regulate the bowels. The alkalies and laxative should be continued for two or three months after all symptoms have subsided.

It is important in carrying out the ambulatory treatment to search for and remove foci of infection that may be etiologic factors and that may interfere with the healing of the ulcer and predispose to recurrences.

Sir Berkeley Moynihan,¹⁷ Tyrrell Gray,¹⁸ Eusterman¹⁹ and others stress the importance of tobacco as a predisposing cause of ulcer and in precipitating recurrences; and there can be no question but that the ulcer patient, whether he is an ambulatory or a bed patient, stands a better chance for immediate relief and permanent recovery if he gives up tobacco. The caffeine drinks, as coffee, tea and Coca Cola, which increase nervous irritability and therefore tend to produce pylorospasm and hypersecretion, should be eliminated. Likewise, alcohol in any form is harmful to the ulcer patient.

17. Moynihan, B.: *Two Lectures on Gastric and Duodenal Ulcer*, New York, William Wood and Company, 1923.

18. Gray, H. T.: *Pathology and symptoms of duodenal ulcer*, Brit. M. J. 1: 1040-1044, June 14, '24.

19. Eusterman, George: *Collected Papers of the Mayo Clinic*.

16. Harris, S.: A relatively high fat, low carbohydrate and rich vitamin diet in ulcers of the stomach and duodenum: A protest against routine diets, *International Clinics*, Vol. 4, Series 35, pp. 55-71.

Jackson²⁰ reported that 14 of 17 patients whom he had operated upon for perforating ulcer had indulged in alcoholic excesses a few hours preceding the perforations.

It is important to stress the need of rest and serenity to the ambulatory patient. If he can be induced to spend two or three week-ends in bed and remain in bed 9 or 10 hours at night, with frequent rest periods, of five or ten minutes each, every one or two hours during the day when he is working, it will enhance his chances for curing the ulcer without hospitalization for the medical or surgical treatment.

In the more severe cases the following diet may be the basis for the dietary management of the ambulatory ulcer patient; it may be added to, or subtracted from, to suit the nutritional needs and the food likes and dislikes of the patient under treatment:

First Week: Glass of milk every 2 or 3 hours from arising until bedtime and at night if awake.

Strained orange juice (medium-sized orange) every 3 hours, taken either with milk or about one-half to one hour before it is taken.

There is no objection to the orange juice being given with the milk. In fact, there is evidence to show that the addition of orange juice to milk makes the curds more flocculent and, therefore, adds to the digestibility of milk.

Strained oatmeal or other cereal breakfast food—except bran—may be given for breakfast and supper, and dry toast and butter at the noon meal may be added as the patient improves in from four days to a week.

Second Week: An egg for breakfast, scraped beef or minced chicken or tender meat of any kind may be added at the end of the first week and continued for about a week. The milk should be continued every 2 or 3 hours between meals.

After two weeks the ambulatory patient should be given a diet somewhat like that of the ulcer patient in bed for the fourth, fifth and sixth weeks. At the end of the fourth week he is given the diet advised for the convalescent ulcer patient after six weeks. In the less severe cases the smooth diet advised for the convalescent ulcer patient—after six weeks treatment—often gives satisfactory results in relieving the symptoms and certainly many ulcer patients have reported permanent cures on about this diet. This rather liberal diet

should be kept up for six months, varying it to keep the patient's weight at the average normal for his age and height.

SIMPLIFIED DIET FOR MEDICAL ULCER BED PATIENT

It is not possible to prepare a diet suitable for all ulcer patients, but it is practicable to construct daily menus for the average case, which may be modified, if necessary, to meet the varying nutritional needs of the individual under treatment. We use the following simplified diet for the average medical ulcer patient who is under treatment in bed in a hospital or at home. It is so constructed that it may be easily changed, increasing or decreasing the amounts of carbohydrates, proteins and fats to meet the estimated requirements in any given case.

First Day: Every hour from 7:00 A. M. to 7:00 P. M., one-half ounce of a mixture of one-third cream to two-thirds milk (thirteen feedings).

One-half ounce strained orange juice after milk at 7:00 A. M., 1:00 P. M. and 7:00 P. M.

Second Day: Every hour from 7:00 A. M. to 7:00 P. M., one ounce of a mixture of one-third cream and two-thirds milk.

One ounce strained orange juice after milk at 7:00 A. M., 1:00 P. M. and 7:00 P. M.

Third Day: Every hour from 7:00 A. M. to 7:00 P. M. (inclusive), one and one-half ounces of a mixture of one-third cream and two-thirds milk.

One and one-half ounces strained orange juice after milk at 7:00 A. M., 1:00 P. M. and 7:00 P. M.

Fourth Day: Every hour from 7:00 A. M. to 7:00 P. M. (inclusive), two ounces of a mixture of one-third cream and two-thirds milk.

Two ounces of strained orange juice after milk at 7:00 A. M., 1:00 P. M. and 7:00 P. M.

Fifth Day: Every hour from 7:00 A. M. to 7:00 P. M. (inclusive), two and one-half ounces of one-third cream and two-thirds milk.

Two ounces strained orange juice after the 7:00 A. M., 1:00 P. M. and 7:00 P. M. milk.

Sixth Day: Every hour from 7:00 A. M. to 7:00 P. M. (inclusive), three ounces of a mixture of one-third cream and two-thirds milk.

Two ounces strained orange juice after milk at 7:00 A. M., 1:00 P. M. and 7:00 P. M.

Seventh to Tenth Days:

7:00 A. M., Breakfast: Three ounces strained orange juice, six tablespoonsful strained oatmeal or one shredded wheat biscuit, with two ounces cream, no sugar.

One slice dry toast of whole wheat bread.

One soft boiled egg. One pat butter.

Three ounces milk.

10:00 and 11:00 A. M.: One ounce of cream and two ounces of milk.

12:00 M., Dinner:

20. Jackson, A. C.: Report of cases of perforated ulcer, Meeting of the Northwestern District of the Medical Association of the State of Alabama, 1928.

Three ounces strained tomato juice.
One tablespoonful scraped beef, slightly broiled.
One slice whole wheat bread, toasted. One pat butter.

Three ounces milk.

2:00, 3:00, 4:00 and 5:00 P. M.: One ounce of cream and one ounce of milk.

6:00 P. M., Supper:

Three ounces strained orange juice.

Six tablespoonsful strained oatmeal or one shredded wheat biscuit, toasted or dry toast of whole wheat bread. One pat butter. Two ounces cream.

One soft boiled egg.

Three ounces milk.

Eleventh to Fourteenth Days:

7:00 A. M., Breakfast:

Three ounces strained orange juice.

Six tablespoonsful strained oatmeal or one shredded wheat biscuit.

Three ounces cream.

One soft boiled egg.

One slice whole wheat bread toasted. One pat butter.

Three ounces milk.

9:00 and 11:00 A. M.: Three ounces milk and one ounce cream.

12:00 M., Dinner:

Three ounces strained tomato juice.

Two large tablespoonsful scraped beef or minced breast of chicken.

One slice whole wheat dry toast. One pat butter.

Two tablespoonsful ice cream.

Three ounces milk and one ounce cream.

3:00 and 5:00 P. M.: Three ounces milk and one ounce cream.

6:00 P. M., Supper:

Three ounces orange juice (strained).

One soft boiled egg.

One slice whole wheat bread, toasted. One pat butter.

Three ounces milk and two ounces cream.

9:00 P. M.: Three ounces milk and two ounces cream.

Fifteenth to Twenty-first Day:

7:00 A. M., Breakfast:

Three ounces strained orange juice or strained grapefruit juice.

Six tablespoonsful strained oatmeal, or cream of wheat or other smooth cereal, no sugar. Three ounces cream.

One soft poached or soft boiled egg.

One slice toast, whole wheat bread, and two pats of butter.

10:00 A. M.: Five ounces milk (half cream).

12:00 M., Dinner:

Four ounces strained tomato juice or strained vegetable soup.

Four rounded tablespoonsful scraped beef or minced breast of chicken.

Four rounded tablespoonsful tender green vegetables, as turnip greens, spinach or string beans (mashed through a sieve).

One slice whole wheat bread toast; two pats butter.

One rounded tablespoonful ice cream, cup custard, boiled custard or gelatine cream.

3:00 P. M.: Five ounces milk (half cream).

6:00 P. M., Supper:

Four ounces thick puree of peas or beans.

Four tablespoonsful tender green vegetables as turnip greens, spinach or string beans mashed through a sieve.

One sliced whole wheat bread toast; two pats butter.

Five ounces milk.

Three ounces strained orange juice.

9:00 P. M.: Five ounces milk (half cream).

Fourth, Fifth and Sixth Weeks:

8:00 A. M., Breakfast:

Three ounces strained orange juice.

Six tablespoonsful strained oatmeal, or one shredded wheat biscuit, or other cereal (no bran); three ounces cream (no sugar).

One soft boiled egg, or poached or scrambled.

One slice dry toast, whole wheat bread; two pats butter.

10:00 A. M.: Five ounces of milk (half cream).

1:00 P. M., Dinner:

Four ounces strained tomato juice, clear broth or tomato broth, or strained vegetable soup.

Four to six rounded tablespoonsful scraped beef or minced chicken or lamb.

Four to six tablespoonsful turnip greens, spinach or string beans, or carrots, mashed through a sieve.

Four tablespoonsful ice cream, boiled custard or gelatine.

One slice dry toast, whole wheat bread; two pats butter.

4:00 P. M.: Five ounces milk (half cream).

6:00 P. M., Supper:

Four ounces thick puree of green or dried peas or butter beans.

Four to six tablespoonsful turnip greens, spinach or string beans or carrots, mashed through a sieve.

One slice whole wheat bread toast; two pats butter.

Four ounces milk.

Four ounces strained orange juice.

9:00 P. M.: Five ounces milk (half cream).

DIET AFTER SIX WEEKS

After six weeks the ulcer diet may be increased or decreased to keep the patient at his normal weight and in a perfect state of nutrition. With that end in view, while undergoing treatment he should be taught the simple facts regarding the vitamin values of food and the importance of continuing to eat a well balanced diet for the rest of his life.²¹ This does not mean food restric-

21. Harris, S.: Educating patient in treatment of gastro-intestinal diseases, J. Tennessee M. A. 12: 440, April '20.

tion, or what not to eat, so much as it does the necessity for taking a sufficient amount of food to keep up strength and endurance, as well as to eat enough of the protective foods to prevent a recurrence of the ulcer.

Especially should he be taught the dictum of McCollum's perfect nutritional day, i. e., that each normal person should drink from a pint to a quart of milk a day, and eat one raw fruit, one raw vegetable and two cooked leafy green vegetables daily. In addition to that, he should eat a reasonable amount of meat once a day, one piece of bread, preferably made of whole wheat flour, or country ground corn meal, with liberal quantities of butter, and then a dessert of fresh fruits, cooked or uncooked, without sugar, or perhaps ice cream, sherbet, gelatine, or other light sugar dessert at one meal. This diet gives the patient with healed ulcer a wide variety of the most palatable foods known to man. He soon realizes that on such a diet he receives the greatest enjoyment from eating; he is comfortable and efficient, and he experiences the joy of living more than he did when he ate without a thought of whether or not the quality and quantity of foods he consumed met his daily nutritional needs.

Diet After Six Weeks

Breakfast:

One fruit: Strained orange or grapefruit or cantaloupe juice.

One cereal: Small portion of thoroughly cooked oatmeal, or other cereal, no bran, or one shredded wheat biscuit with one-half glass cream, no sugar.

Eggs: One egg poached or soft boiled, or soft scrambled.

Bread: One slice whole wheat toast, two or three pats butter; two tablespoonsful honey.

Milk or cocoa: One glass milk or cup of hot cocoa.

Three Hours After Breakfast: One glass milk (one-third cream).

Dinner:

Soup: Strained chicken, celery, vegetable, barley soup, or strained tomato juice.

Tender meats (small portion): Broiled, or baked, not fried; small portion of chicken, turkey, mutton, roast beef, bacon, thinly sliced boiled ham, or fish.

Tender green and yellow vegetables (one variety of each): Large serving spinach, turnip greens, tender string beans, cooked without much grease, carrots, squash, or young turnips. Butter or mayonnaise or olive oil and lemon juice may be used freely on vegetables after they have been cooked.

Bread: One slice whole wheat bread or dry toast, or small piece of country ground corn meal

bread, or one small corn muffin; two or three pats of butter.

Milk: One glass milk or buttermilk (one-third cream).

Dessert: Soft part of baked apple, thoroughly ripe banana or other fruit with cream, no sugar. Ice cream or gelatine, or sherbet, twice a week.

Three Hours After Dinner: One glass milk.

Supper:

Soup: Puree (thick strained soup) of peas or beans, or oyster stew, no oysters.

Raw vegetable salad: Crisp lettuce (trim out tough stems); peeled tomatoes (cut tough centers); crisp cold slaw made of leafy part of tender cabbage (cut out the stems of the leaves). Olive oil and lemon juice or apple vinegar or mayonnaise dressing may be used freely.

Two crisp crackers.

Cheese: Four tablespoonsful home-made or dairy made cottage cheese, or cream cheese, or the equivalent of two tablespoonsful of Swiss, Philadelphia or yellow American cheese, never cooked.

Bread: One slice whole wheat bread or dry toast, or six crackers.

Two or three pats butter.

Milk: One glass sweet milk or buttermilk (one-third cream).

Dessert: Strained orange juice, soft part baked apple, or very ripe banana and cream without sugar, or gelatine, or egg custard.

DIETARY MANAGEMENT OF PEPTIC ULCER PATIENTS BEFORE AND AFTER OPERATIONS

The problem of dieting the ulcer patient before and after operation is entirely different from that involved in the effort to heal gastric and duodenal ulcers medically; and the recognition of the pathologic physiology in the surgical patient, while applying the accepted principles of nutrition adapted to the needs of the individual under treatment, will reduce very materially the operative mortality of ulcer.²² Likewise, rational postoperative dietary management will prevent many recurrences of the original ulcer as well as safeguard against the dreaded jejunal or gastro-jejunal ulcers which follow only too frequently after gastro-enterostomies.

The failure to get the ulcer patient in the best possible state of nutrition before operation and haphazard postoperative dieting account for the deaths from acidosis, shock and myocardial weakness of many asthenic individuals whose resistance has been lowered by years of malnutrition from pyloric stenosis with resulting gastrectasis. It also is true that the infections causing

22. Harris, S.: Curing ulcer patient, *Ann. Int. Med.* 4: 149-165, Aug. '30.

postoperative pneumonia, pleurisy, peritonitis and other complications following gastro-enterostomy and gastric resection may be prevented in many cases if the patient is properly prepared for the operation by a few days of dieting suited to his particular needs. Therefore, the surgeon should not consider a gastric operation as merely a mechanical procedure, but should recognize the nutritional problems involved; and when possible he should associate with him in the management of his ulcer patient a physician who has had proper training and ample experience in dealing with such cases. It is still better for the surgical ulcer patient to be under the care of the physician and let him call in the surgeon to perform the operation when the patient has been properly prepared.

There can be no routine diet and no fixed period of time required to prepare an ulcer patient for operation. Each case presents problems that have to be worked out to meet the nutritional requirements of the individual under treatment. The well nourished ulcer patient, without gastric retention, and with a normal or high degree of free hydrochloric acid in his stomach contents after a test breakfast requires very little or no preoperative preparation—usually not longer than twenty-four hours.

The time required for the preparation for an elective operation on an ulcer patient with gastric retention cannot be fixed because it depends upon his state of nutrition and his vitality as to whether or not he can survive a serious abdominal operation. Not less than three or four days should be required in the fairly well nourished patient with retention; and from one to three weeks are necessary in preparing the emaciated, anemic and dehydrated patient with gastric retention of over fifty per cent six hours after the barium meal.

Lahey²³ is emphatic in stressing the need for preoperative preparation of the ulcer patient. He says:

"One of the most important considerations in dealing with patients having gastric or duodenal ulcers in whom surgery is contemplated is the realization that any operation for gastric or duodenal ulcer may prove to be a long and shocking one, and that a period of preparation with plenty of fluids, glucose and transfusion may play a considerable

part in bringing the ordeal to a successful conclusion."

Moynihan,¹⁷ in discussing the preparation of ulcer patients for operation, says:

"His capacity to stand an operation is gauged, and if it proves weak we endeavor by all means in our power to fortify it. In cases with great obstruction where the tissues are parched and desiccated, and a fear of acidosis after operation may be entertained, an intravenous infusion with carbonate of soda, with or without glucose, is found helpful. If a patient is profoundly ill, these measures may be followed by a rest in one of our convalescent hospitals in the country for two or three weeks before the operation."

Soluble carbohydrates may be given freely but no protein foods should be given for twenty-four hours before operation in the ulcer patient with pyloric obstruction because water passes out of the stomach slowly during gastric digestion, and there may be retention of food and fluids in the stomach if milk or any other food containing protein is given. Fats are retained in the stomach even longer than proteins, and an excess of fats is a cause of acidosis. Therefore, no fats should be given to ulcer patients for at least twenty-four hours before operation.

Postoperative Dietary Management: Gastric physiology as well as the operative wound and the state of nutrition of the individual should be considered in dieting the ulcer patient after the operation. Gastric secretion and motility are increased by giving proteins. It, therefore, would seem advisable to give no food requiring gastric digestion for a week, or even longer, after operation. Protein digestion is associated with gastric peristalsis, and if milk or other food containing protein is given before the gastric wound has healed the principle of surgical rest is violated. Friedenwald and Finney do not allow milk for the first week after operation. Jaratsky objects to giving milk after gastric operations as being "unphysiological and illogical," because milk excites gastric secretion and the first step in the digestion of milk is coagulation with the formation of a solid mass of curds, which require gastric peristalsis and gastric secretion for digestion.

Fats surely are not indicated for the first week after operation because of the danger of acidosis and also because fats remain in

23. Lahey, F. H.: Treatment of gastric and duodenal ulcer, J. A. M. A. 95: 313-316, Aug. 2, '30.

the stomach longer than other foods, and if they are given too soon after operation the stomach may become overdistended with the accumulation of food and fluids.

The soluble carbohydrates meet the nutritional needs of the ulcer patients for the first few days after operation and also give physiologic rest to the stomach.

Lahey,²³ who perhaps has had as large a personal experience in gastric surgery as any man in the world, has strong convictions regarding the medical aftercare in operated gastric and duodenal ulcer cases. The following paragraph is quoted from an article by him:

"Any unprejudiced person must admit that a patient who has had an ulcer, whether operated on or not, is always a possible candidate for another ulcer, and that those patients who have submitted to surgical procedures for ulcer, no matter what the type, are less likely to have recurrent ulcers and more likely to have better end-results when placed on just as careful postoperative medical management as if they had not been operated upon, and when urged to modify their habits of life just as much as they would if placed on nonoperative medical management."

Like wise Sullivan,²⁴ Finkelstein,²⁵ Kruse,²⁶ Ralph Brown,²⁷ Patterson,²⁸ Rowlette²⁹ and other surgeons stress the need for medical supervision of patients who have been operated upon for peptic ulcer.

MEDICINES

Lenhartz advised bismuth subnitrate in drachm doses, suspended in water, one hour before beginning the morning food. There is some difference of opinion as to how the bismuth acts and as to whether or not it has any effect. It has been shown by the x-ray that in some cases—not all by any means—bismuth will remain in the crater of the ul-

cer after it has passed out of the other parts of the stomach. It may, therefore, have some effect in protecting the ulcer. Aaron³⁰ thinks that the bismuth subnitrate is broken down with the liberation of nascent nitric acid which acts as an antiseptic, stimulant and astringent to the ulcer, thus promoting healing.

One observer has shown that bismuth in any form causes the secretion and pouring out of gastric mucus, which Conheim believes to be deficient in gastric ulcer, thus protecting the ulcer from the irritating effect of the hydrochloric acid which is usually present in excess. At any rate, bismuth subnitrate seems to be helpful. It is given in drachm doses on the empty stomach in the morning; and the subcarbonate in 30 grain doses, alternating with one-half to one drachm doses of soda between each feeding, depending upon the degree of hydrochloric acidity as found by repeated examination of the stomach after test meals.

Sippy used the calcium carbonate in gram (15 grain) doses, which in household measure amounts to about a level teaspoonful, one-half hour after taking food. In my experience the calcium carbonate is quite as effective as bismuth subcarbonate, and it is less expensive, a consideration of importance to many. In fact, in recent years, I have used the calcium carbonate instead of the bismuth subcarbonate almost altogether.

Care should be taken not to give an excess of the alkalis in the old or neglected ulcer cases with gastrectasis because with low gastric acidity there is real danger of alkalosis if too much sodium bicarbonate is given. An excess of alkalis in an old neglected case of ulcer with subacidity brought on an attack of unconsciousness in one of our patients, which was proven to be due to alkalosis. The patient responded to intravenous dextrose therapy, but this near accident taught us the dangers of over-alkalinization in old ulcer patients. Crohn,³¹ Hardt and Rivers³² have called attention to

24. Sullivan, A. J.: Role of surgery in treatment of peptic ulcer, *New England J. Med.* 204: 191-198, Jan. 29, '31.

25. Finkelstein, R.: Treatment of peptic ulcer, *Am. J. Surg.* 10: 97-106, Oct. '30.

26. Kruse, F. H.: Causes of failure in medical management of peptic ulcer, *California & West. Med.* 33: 550-555, Aug. '30.

27. Brown, R. C. (Chicago): Results of medical treatment of peptic ulcer, *Tr. Sect. Practice Med., A. M. A.*, pp. 223-236, '30; also, *J. A. M. A.* 95: 1144-1148, Oct. 18, '30.

28. Patterson, H. J., and Finsterer, H.: Place of gastro-jejunostomy in gastric and duodenal surgery, *Brit. M. J.* 2: 555-561, Sept. 25, '26.

29. Rowlette, R. J.: British Medical Association lecture on medical treatment of gastric and duodenal ulceration, *Brit. M. J.* 2: 290-293, Aug. 18, '28.

30. Aaron: *Diseases of the Digestive Organs*, Philadelphia, Lea & Febiger, p. 423, 1915.

31. Crohn, Burrill B.: *Affections of the Stomach*, Philadelphia, W. B. Saunders Company, 692-758, 1927.

32. Hardt, L. L., and Rivers, A. B.: Toxic manifestations following alkaline treatment of peptic ulcer, *Arch. Int. Med.* 31: 171-180, Feb. '23.

the dangers from alkalosis and the symptoms produced by large doses of sodium bicarbonate in ulcer patients.

If there is constipation, oxide of magnesia is given in 10 to 20 grain doses with the bismuth or sodium bicarbonate four times a day; or with the bismuth subnitrate, or subgallate, one-half hour before breakfast.

In some cases, particularly the nervous patients, strontium bromide, grains 10, in mint water two or three times a day is helpful. If there is hyperchlorhydria or tendency to pylorospasm, the tincture of belladonna in doses of 10 to 15 drops is given three times a day before eating.

In cases where there is retention of food, lavage with a solution of sodium bicarbonate, drachms four, to two quarts of water, is given at 9:00 P. M.; and if there is excessive secretion as in gastro-succorhea, which is sometimes associated with ulcer, lavage is given in the early morning one-half hour before beginning the nourishment.

TREATMENT OF HEMORRHAGE

Should hemorrhage occur in ulcer of the stomach or duodenum the patient should be kept absolutely quiet in bed. Thirst may be allayed by cracked ice and rinsing the mouth with water. Fluids can be supplied by giving physiologic salt solution per rectum by the Murphy drip method. A light ice bag should be kept over the epigastrium, at least during the day. Bismuth subnitrate, drachms 2, suspended in one ounce of water may be given once or twice a day. It acts as a gastric sedative and seems to favor clotting. In most cases the hemorrhage will stop simply by keeping the patient quiet.

If the patient is restless and alarmed on account of the hemorrhage, or if vomiting and retching are pronounced, one-fourth grain of morphine sulphate, or one-half to one grain of codeine phosphate should be given and repeated every three or four hours if necessary to control vomiting. Ordinarily one dose is sufficient. Fifty cc. of a sterilized ten per cent gelatine solution may be given subcutaneously and repeated two or three times a day if the hemorrhage continues.

If there is much loss of blood, transfusion (250 to 500 cc.) may be resorted to early,

and repeated if the hemorrhage does not stop, or if the patient is very anemic. This, when indicated, not only supplies the patient with needed blood but seems to have some effect in stopping the hemorrhage. Serum, since it contains the fibrin ferment necessary for clotting blood, preferably given intravenously, seems to be useful in gastric hemorrhage. Fresh human blood serum is best but horse serum may be used. It is sold in sterile containers containing ten to twenty cc. Diphtheria antitoxin, since it contains horse serum, has been used in an emergency when the plain serum could not be obtained. Ergot, hydrastin, adrenalin, iron and a number of other drugs have been used internally in hematemesis, but I have discarded those mentioned because they are not indicated physiologically; and I have not seen any beneficial results from any of them.

Kauffman employs lavage with good results in gastric hemorrhage. It must be carefully applied and should not be used if there is much retching from the use of the stomach tube. It would seem that lavage would be useful in preventing overdistension of the stomach by removal of the blood clots and that it would also prevent the fermentation and putrefaction of the blood which occurs if the hemorrhage is retained too long either in the stomach or intestines; but I have never had the courage to introduce a tube into a bleeding stomach. If there has been sufficient erosion into a gastric ulcer to open up a blood vessel, perforation may also be imminent and even a soft rubber tube, it seems to me, might tear through the thin tissue that separates the bottom of the ulcer from the peritoneal cavity.

Enemata of hot water (115 to 120° F.), about a pint at a time beginning twenty-four hours after the hemorrhage has stopped and repeated two or three times a day, will remove the blood from the intestines and prevent the toxemia which comes from the decomposition of blood if retained too long in the colon.

Nutritive enemata should not be given because they may bring on gastric peristalsis and none of them are absorbed. Nourishment may be given intravenously in the form of 500 to 1,000 cc. of a ten per cent solution of dextrose two or three times a day.

Lenhartz began feeding ulcer patients within twenty-four hours after a hemorrhage. Following his teaching I formerly did so but in one case it seemed to bring on a return of the hemorrhage. Since then I begin the modified Lenhartz diet in 48 hours after the hemorrhage and have not seen the slightest trouble from it.

TEACHING THE CONVALESCENT ULCER PATIENT HOW TO LIVE

In treating gastric and duodenal ulcers either medically or surgically it should be remembered that it is a secondary condition with which we are dealing, and one which is likely to return unless the underlying causes are sought for and removed. The *Streptococcus viridens* or other pyogenic micro-organisms from focal infections in the teeth, tonsils, gallbladder, appendix, or in any part of the body may be the exciting cause; but a localized area in the stomach in a lowered state of vitality from some cause must provide the *locus minoris resistentiae*.

Careful questioning of ulcer patients will usually bring out a history of gross errors in diet or in habits of living which result in trauma of the gastric mucosa. These may be regarded as the predisposing causes. They are the same as those we find in patients suffering from hyperchlorhydria, which is usually seen in ulcer, and which I believe nearly always precedes it. Rapid eating, insufficient mastication, overeating, the ingestion of coarse foods, hot drinks, alcohol, coffee, tea, Coca Cola and other caffeine beverages, the excessive use of tobacco, overwork, worry, grief, fear or other cause of functional hyperchlorhydria must be looked after.

The particular error or errors in diet and living must be pointed out to the patient and he must be taught how to live in order to prevent the recurrence of ulcer. In my opinion, one of the reasons why surgery so often fails is that the patient believes that the operation is all that is needed to restore him to complete health, and he goes back to the same method of living that brought on the ulcer in the beginning. The ulcer patient should be made to know that for a year or two, and probably for the rest of his life, whether he is treated medically or by surgery, he must lead the simple hygienic life if he hopes for continued health.

I regard the ulcer patient as a teacher looks upon a pupil, i. e., one to be taught personal hygiene with particular reference to avoiding errors in diet; and the daily effort is made to instruct him how to live in order to enjoy health and efficiency. Psychotherapy, particularly the DuBois method of re-education, should be practiced in dealing with ulcer patients, because there is usually the psychasthenic element present. It is the careful attention to every detail that gives best results in the dietetic and medical treatment of gastric and duodenal ulcer.

SYSTEM OF HYGIENIC LIVING FOR THE HEALED ULCER PATIENT

A copy of the outline of a system of hygienic living with copies of simplified diet lists prepared to suit his particular needs is given to each of our convalescent ulcer patients before he is dismissed.

1. The Proper Diet: Three medium meals a day at the same hours, and a glass of milk between meals for at least three months after treatment; then one raw fruit, one raw vegetable, two cooked tender green vegetables, a pint to a quart of milk every day for the rest of the ulcer patient's life. Meat and light desserts are allowed not more than once a day; and enough bread, potatoes, rice, butter and other simple foods to maintain the normal weight. Thorough mastication of food is very important.

2. Work: Avoid overwork. Six to eight hours of honest work a day for five days a week and three or four hours on Saturday.

3. Sleep: Eight or nine hours in bed at night; and lie down, sleep, if possible, for half an hour after the noon meal.

4. Exercise: Fifteen minutes' room exercise with windows wide open, before the morning bath. Follow the bath with massage (brisk rubbing with open hand) of the entire body until the skin is reddened. A walk of one or two miles in the open air and sunlight each day, or what is better, play golf two or three afternoons a week.

5. Recreation: Eight hours for play includes morning exercises, bath, golf, or other outdoor exercises; time for eating at least one-half hour for each meal, perhaps an hour for dinner and no work or serious reading after six o'clock in the afternoon. Frequent week-end trips and an annual va-

cation of from two weeks to a month every year.

6. Serenity: Worry, anger, grief, abnormal fears, or other emotional disturbances will break down resistance to infections. Therefore, the cured ulcer patient should cultivate serenity in all the relations of life.

7. Eliminate the Toxins: Coffee, tea and the so-called cola drinks, which contain caffeine, a habit forming drug, should not be used by the ulcer patient, except occasionally as a stimulant after losing sleep; or as a drug for headache or shock. Tobacco and alcohol are predisposing causes of ulcer and are quite injurious to the ulcer patient; therefore he should never use them in any quantity, even after his ulcer has been pronounced cured.

8. The Annual or Semi-Annual Physical Examination: The ulcer patient should report to his physician once a month for six months, and then for the rest of his life have an annual or semi-annual physical examination, with particular reference to a possible return of the ulcer; or the possible development of a cancer of the stomach, which, if diagnosed early, can be cured by operation.

Each section of the above outline of hygienic living is discussed with the patient and he is shown how he can conform his daily habits to a regular systematic regimen. He is also impressed with the fact that his future health, efficiency and happiness depend largely upon his living a simple hygienic life, and that he must do his part in preventing a recurrence of his ulcer.

The great majority of properly treated ulcer patients, whether medical or surgical, may look forward to becoming more efficient and to enjoying life more than they ever did before; provided they follow the same rules of personal hygiene that every man in health should observe. The ulcer patient perhaps will live longer than he would have had he not developed an ulcer, because, if taught properly how to live as the physician or surgeon has the opportunity of doing, he will take such good care of himself that he will be less susceptible to many of the infections and infirmities of middle life, and old age will thus be deferred.

THE SURGICAL TREATMENT OF PEPTIC ULCER*

By

LLOYD NOLAND

Fairfield, Alabama

We have had the good fortune to hear three most excellent papers covering the etiology, symptomatology, x-ray diagnosis and medical treatment of gastric and duodenal ulcer, and it now falls on me to present in a brief way the part that surgery may play in the management of these often serious lesions.

The surgical treatment of peptic ulcer should be thought of as a special measure used to cope with complications or as an attempt at cure of those ulcers which fail to respond to medical treatment.

The field is a large one and must necessarily be treated briefly in this paper.

It goes almost without saying that the surgeon attempting gastric or duodenal surgery should so familiarize himself with the various approved procedures in this field that he should with little or no hesitancy decide on the operation best suited to each individual case as conditions are revealed in his exploration.

Let us first consider the two real emergencies in this field, namely, perforation and hemorrhage.

The symptoms of acute perforating gastric or duodenal ulcer are thoroughly known to all medical men. In the presence of acute, severe epigastric pain, board-like rigidity of the abdomen, usually a slow pulse in the beginning, without elevation of temperature, and with moderate, if any leukocytosis, often a history of digestive disturbance over a considerable period, and most usually in a young male, there should be little hesitancy on the part of any physician in recommending immediate surgery.

In a large proportion of cases the perforation will be found prepyloric or duodenal, and if surgery has been performed in the first few hours the closure should be easy and the results excellent.

There has been much discussion as to the technique of handling these cases, many

*Fourth and last part of a symposium on peptic ulcer, presented to the Association in annual session, Birmingham, April 17, 1934.

able men advocating a gastro-enterostomy in addition to closure of the perforation.

It is our feeling that the surgeon's primary duty is the saving of the patient's life, and we are firmly of the opinion that simple closure of the ulcer is the operation of choice in this emergency. We believe that gastro-enterostomy is never indicated unless marked obstruction of the pylorus or duodenum is present at the time of perforation or is created by the closure of the ulcer. If measures are to be directed against the ulcer itself this should be done, in our opinion, when the patient has recovered from the perforation and is in the best possible condition to withstand a larger procedure.

One of the most serious problems in the surgery of gastric or duodenal ulcer is that associated with massive hemorrhage. Unfortunately, the type of surgery required in the handling of a bleeding duodenal or gastric ulcer should be such as to remove the ulcer and overcome danger of further bleeding, but an operation which accomplishes this, such as a partial gastrectomy, is one of serious magnitude and associated with high degrees of shock. It is our opinion, therefore, that patients who have very recently suffered severe hemorrhage are not fit subjects for any extensive operative procedure, and we believe that in every instance the attempt should be made to get these patients over the immediate effect of hemorrhage and attempt to treat them medically until they are in shape to stand a radical operative procedure.

Lahey states that in his Clinic there was a past history of hematemesis or tarry stools in 15 per cent of the cases successfully treated by medical measures. Of the cases unsuccessfully treated under medical measures there was a past history of bleeding or of tarry stools in 55 per cent of the cases. In a single group of 17 cases having a past history of two or more hemorrhages, 82 per cent had a recurrence of symptoms and were failures under medical management. Lahey further states that it is obvious from these figures that when hemorrhage, either in the form of hematemesis or tarry stools, is associated with ulcer symptoms, one is dealing usually with a quite intractable type of ulcer. Occasionally a case of massive acute hemorrhage, recurrent in

type, will be met with in which it seems hopeless to wait for improvement and in which, in spite of extreme danger, surgery must be done. These patients are too ill to consider any type of radical procedure. The patient may be too far gone to attempt anything but local anesthesia. The ulcer in such cases is usually on the posterior wall of the duodenum. Lahey has designed a direct approach in these cases advocating ligation of an open vessel or suture of the bleeding ulcer through an anterior incision, followed by pyloroplasty or gastro-enterostomy. Naturally the mortality in such procedures is extremely high but in certain cases it offers the only hope.

It is a safe general rule that ulcer cases with a history of two or more hemorrhages, occurring in spite of adequate medical treatment, should be submitted to operation as soon as they can be gotten in shape to stand radical surgery.

In deciding on one of the various types of operation for gastric ulcer the surgeon must be largely guided by the location of the lesion. If the ulcer is on the greater curvature of the stomach there seems little choice short of a partial gastrectomy, as practically 100 per cent of these lesions will prove to be malignant sooner or later.

Prepyloric ulcers and eroding ulcers on the posterior wall of the stomach, which fail to yield to medical measures and in which there are a persistence of pain, occult blood in the stools, and x-ray defect, are also open to marked suspicion of malignancy and should be treated by partial gastrectomy. Although ulcers of the lesser curvature are least open to a suspicion of malignancy, those which persist in symptoms and x-ray findings are probably best treated by partial gastrectomy rather than by local excision. Lesser curvature lesions situated close to the esophageal entrance are best treated by excision, for in these cases removal by partial gastrectomy requires almost a total gastrectomy and the high mortality incident to so extensive a procedure is a greater risk than is involved in a less radical procedure with possible recurrence. Simple excision, therefore, combined with posterior gastro-enterostomy is the operation of choice in such cases.

Decision as to type of operation in the treatment of duodenal ulcer is much more

difficult than is the problem in gastric ulcer and must always be based on the questions of perforation, bleeding, obstruction and recurrence of symptoms. We have already expressed ourselves as to the handling of cases of perforation. Lahey states in the combined medical and surgical handling of 1,489 gastric and duodenal ulcers at his Clinic that in 62 per cent of those patients presenting themselves with evidence of pyloric obstruction surgery was unnecessary.

The only obstructive pyloric lesion in which immediate surgery is indicated and is brilliantly successful is not associated with ulcer symptoms, that is, cicatricial pyloric obstruction, due to the healing of a prepyloric or juxtapyloric ulcer; in other words, a purely mechanical lesion. In such a lesion posterior gastro-enterostomy is indicated and its results are almost uniformly satisfactory.

The location of the duodenal ulcer should be the governing factor in the decision as to type of operation to be performed when persistence of symptoms, other than perforation, hemorrhage, and obstruction, is present. If the ulcer is on the anterior wall the safest and most satisfactory operation is excision and pyloroplasty by the Judd or Horsley technique, but if the ulcer is on the posterior wall the selection is much more difficult. Partial gastrectomy in such a case is unquestionably the operation of choice from the standpoint of end results, but its high mortality in average hands must be considered as a serious factor. Gastro-enterostomy will have a much lower mortality rate but the end results will show a definite percentage of failure. The Bal-four procedure—anterior section, cauterization, and gastro-enterostomy, should be considered. The Devine operation—prepyloric section, closure and gastro-enterostomy, has a definite field. The Lahey technique—prepyloric section, posterior Polya anastomosis accomplished by incision of the ligament of Treitz with secondary partial duodenectomy, should give brilliant results in skilled hands, and unquestionably the two-stage procedure should markedly reduce the high death rate of partial gastrectomy, for in a large proportion of cases that part of the procedure involved in the partial removal of the duodenum is extremely

difficult and dangerous. The time limit of this paper will not allow consideration of the most serious of all gastric ulcers—gastrojejunal ulcer following gastro-enterostomy, which is almost a subject in itself.

Gastrojejunal ulcer, especially if complicated by a colonic fistula, calls for the acme in mature judgment and surgical skill, and to a large extent this is true of every one of the lesions of the stomach and duodenum discussed in this paper.

REMINISCENCES*

By
J. M. WHITESIDE, M. D.
Anniston, Alabama

Someone has said that when a man reaches pier seventy, and waits for the ship that never unfurls a return date; that sails the interminable seas that reach from these shores to the beyond, he loses his spirit of prophesy, turns his back upon the dawn, and delights in recounting and worshiping the hallowed past. I am aware of how boresome it is to recall the noble deeds of other days and of other men, but it would be base ingratitude not to acknowledge that we carry on successfully today by virtue of the truths they developed and firmly fixed as a foundation for scientific medicine, thus erasing the stigma of empiricism from our medical escutcheon. So, lest we should forget upon whose shoulders we are standing, let me take you for a short excursion along the corridors of medical history. As we pass the avenues of memory we will look in and see the actors that have been instrumental in transforming the healing art from an empirical calling to a scientific profession.

Many and varied are the actors in the medical and surgical arena. Divers and diverse are the motives that prompted their entrance into this calling. Some came in through greed of gain; some on account of prestige and position; some for the love of learning all about the body—how it is made, how it functions in health and its reactions to disease. Let the motives for entering the medical and surgical arena be what they may. It is my purpose to notice only

*Read before a meeting of the Northeastern Division of the Association, Anniston, March 13, 1934.

a few of those who have taken a stellar role in the progress of scientific medicine. Prior to the beginning of the 19th century, the practice of medicine was largely empirical. Its knowledge consisted of folk-lore and was handed down by old women and the aged.

Surgery was in the heroic age—they held them and cut them. Not without a struggle has medicine reached its present, proud position; the combat has been largely against ignorance and superstition both within and without its ranks.

Medicine as a science really began with Louis Pasteur, the Frenchman. He was a chemist, born in 1822 and died in 1895. He brought eternal glory to his name and remains man's greatest benefactor by his discovery of the microbial origin of disease. Joseph Lister, an English surgeon, a contemporary of Pasteur's, accepted the theory of microbic infection of wounds and made a practical application of antiseptics, using mostly carbolic acid as a spray—diluted and even in a pure state—and reduced his mortality in major operations from 50 per cent to 15 per cent and forced his contemporaries Billroth, Spence and McEwen to accept his technique before they could get results. Dr. L. L. Hill says: "On Pasteur's 70th birthday a celebration was held at Sorbonne, France, in his honor. With the band of the Republican Guard playing a triumphal march, Pasteur, worn and broken, leaning heavily upon the arm of the French President, Carnot, came upon the stage and fell into the arms of Lister. It was like the meeting of Wellington and Blucher after Waterloo when the great Corsican commenced his melancholy march to St. Helena. It was the signal to the world that the surgery of the past, with its indescribable sufferings, miseries, misfortunes and death, was gone and forever, and that a new era, a golden age, of untold possibilities filled with hope, happiness and life for this and future generations had loomed. It was man's redemption of man. It was science in benediction with outstretched hands."

Let us change the scene but the time is about the same and we see Klebs of Switzerland and Loeffler of France almost simultaneously discovering the bacillus of diphtheria, with the aid of the magnifying

lens devised many years before by Leeuwenhoek. In 1890 Von Behring, a Prussian, demonstrated that bacterial toxins of diphtheria, passed through another animal, would produce a serum antagonistic to the further action of the *Bacillus diphtheriae*. Thus was antitoxin born. Reasoning by analogy, the profession expected to produce a serum that would be an antidote for all contagious diseases; and in the prosecution of these studies the branches of serology, immunology, and toxicology were developed. Among the leaders in these important branches of applied therapeutics we find Roux, Ehrlich, Metchnikoff, Koch, Bordet, Wright and Noguchi.

Each of these names is so rich in research and discovery in its respective field as to require an essay of its own. Suffice it to say that the announcement, in 1883, that Koch had discovered the germ of tuberculosis startled the medical world. At that time one out of every ten deaths was due to some form of tuberculous infection, and most of the profession believed it to be a familial disease and not contagious or infectious. Of course, the cause of tuberculosis having been determined, the profession was sure a cure would soon be coming, but ten years elapsed before Koch announced tuberculin as a remedy or cure. The remedy or some modification is still used and receives both praise and condemnation.

Twenty years ago, when Ehrlich announced a remedy that would kill the spirochete of syphilis, a disease next to tuberculosis in its universality, the profession said what a blessing it is to be able to throw off that insidious plague. With the help of Wassermann, Kahn and Kolmer, a method of diagnosis has been perfected and much done in the way of treatment. Much remains to be done, however, before this social scourge has been thoroughly routed.

Coming to America, in the forties, we see Crawford W. Long of Georgia and Morton of Massachusetts giving us ether as an anesthetic, thus enabling the surgeon to take his time and to remove all show of brilliancy at the operating table. The era of heroic surgery was past, and pathologic and physiologic surgery was born. Field after field was explored as regions previously inaccessible were opened up and surgeons proceeded with assurance to attack and subdue

realms hitherto considered immune. With a safe anesthetic, Listerian antiseptics, the later day asepsis, and that wonderful gift out of a clear sky in 1895, the roentgen ray, enabling the surgeon to make a diagnosis before operation, we need not be surprised at the galaxy of brilliant surgeons adorning the pages of American surgical history. Bring to mind a few names and you will recall the great work they have done—Gross and Price of Pennsylvania, Sims, Wyeth, McBurney and Morris of New York, Senn, Murphy and Davis of Chicago, the Briggses and Eves of Tennessee, Matas of New Orleans and many others of greater or less note. As pioneers in their respective fields we must always offer allegiance to Ephriam McDowell of Kentucky, Robert Batey of Georgia and J. Marion Sims of the world.

As this paper must be short and to the point if it would hold your interest, let me next present a shrewd, humorous, literary physician, namely, Oliver Wendell Holmes. Ignoring the pomp and display of dress, such as high hat, long coat, gold cane and flowing beard, and of somber and sedate look—supposed to indicate wisdom—he even dared to be witty and pleasant in the sick room. His crowning glory was his immortal paper on the contagiousness of puerperal fever. He wrote: "When by the permission of Providence I held up to the professional public the damnable facts connected with the conveyance of poison from one mother's chamber to another, for doing which I desire to be thankful that I have lived though nothing else good should come of my life, I had to bear the sneers of those whose position I assailed. I believe I have at last demolished them, so nothing remains, but the ghosts of dead women to stir among the ruins."

Prior to 1880 very few medical colleges required more than two short years in which to graduate a fully equipped physician to feast and fatten upon an unsuspecting public. No preliminary education was required. The Association of American Medical Colleges, by grading institutions as A, B or C and extending the time for graduation to four years (at least two years of college work being necessary for entrance), reduced the number of schools teaching medicine from 160 to about 80. The screening process was aided also by State Boards

of Medical Examiners who refused to recognize graduates of colleges of B and C grade. Through these means nearly all such institutions were forced to close. In 1881 John A. Wyeth and associates, realizing how poorly equipped the average doctor of medicine was for the duties and responsibilities required of him, opened the Polyclinic Hospital where postgraduate work could be engaged in. Thus was a foundation laid for a better educated profession.

The high standards set for its members by the medical profession have caused many of the brightest men of the country to enter its ranks. As a natural result different departments have been developed until today there is a specialist for nearly every organ of the body. Moreover, while the regular profession has been busy treating the ills of the body or mind as is its special duty—perhaps overlooking the cause of illness, we find a great and formidable number, backed by the State and Nation, under the name of public health asking, why be sick? They say that prevention is better than cure. When we look back and see what public health has done in the way of prevention and sanitation during the past few decades, we realize that the world owes it a debt that money cannot pay.

The Yellow Fever Commission, composed of Reed, Ross and Lazear, found the cause and mode of propagation of yellow fever. As a consequence Gorgas and his associates applied the necessary remedy, the tropics and subtropical countries of the Western Hemisphere becoming a place of permanent abode and not one of precarious existence. Yellow fever, malaria, typhoid fever and pellagra, once the four horsemen that devastated the South like some acute plague, are among the diseases brought under control by preventive medicine. Will it be too much to ask of public health that it develop a vaccine or serum to prevent measles, mumps, scarlet fever, whooping cough and chickenpox? One might rejoin that the prevention of these contagious and infectious diseases will render it difficult for physicians to make a living. To my mind the highest ideal for a physician is a desire to keep his patient well. How that is to be done requires much study of and inquiry concerning a particular patient, such as

heredity and habits of diet, work, play, sleep, self indulgence, etc. It should be a function of public health to see that all are born right (undesirables should be sterilized). The ordinary doctor should have much to say about what his client should eat and how he should eat it. He should also regulate his habits as to work, play and sleep, the NRA to the contrary notwithstanding. When some future research worker finds out all that should be known about hormones and internal secretions, what centers in the brain stimulate their production, how they regulate growth, energy and endurance (possibly regulate and control immunity to disease and stay the ravages of old age), then will the Utopian era have arrived and death come like the wearing out of the one-horse shay.

I desist from further speculation and as a plain ordinary doctor give you this final conclusion. It does not matter how good a technician you may be; how clever a diagnostician you are, or how able you are to combine a bitter dose in a palatable mixture; if you do not have the ability and tact to give comfort, ease and hope to the patient, both mentally and physically, in keeping with the seriousness of the disease, you are not as good a doctor as you ought to be.

Ruptured Esophageal Varices—The relationship of hemorrhage to the esophageal varix is of such importance as to warrant considerable attention. In spite of the fact that patients occasionally have died of hemorrhage in which varices could not be demonstrated, and the hemorrhage was considered to be diffuse capillary bleeding from the gastric mucosa, it is believed that a more careful examination would have disclosed their presence. Even in the most marked cases the veins collapse after death and are practically invisible beneath the squamous epithelium of the esophagus. The point of rupture, too, is usually insignificant, and for this reason the varices are often overlooked. Nevertheless, if inflation or injection is resorted to, the varices stand out with startling prominence and the bleeding point is usually clear. They are situated in the lower three-fourths of the esophagus and close to the cardia, and occur both in the submucosal and periesophageal regions, with branches penetrating the muscular coat and uniting the two systems. If the mucosa is stripped off, the superficial set is found to lie in a series of rows in the long axis of the esophagus, gradually fading away above into the deeper set.—*Russ, Texas State J. Med., August '34.*

VOLKMANN'S ISCHEMIC CONTRACTURE*

By
S. RALPH TERHUNE, M. D.
Birmingham, Alabama

A few weeks ago the Journal of the American Medical Association carried an account in its medicolegal department of a suit instituted against a physician for malpractice because of the development of a Volkmann's ischemic contracture following a supracondylar fracture of the humerus. The plaintiff's attorney charged that tight bandaging stopped all circulation in the arm, causing ischemic paralysis, followed by the contracture. Fortunately, a judgment was rendered for the physician after expert witnesses testified that ischemic contracture sometimes occurs when there is no bandaging at all, and that the condition is caused by the injury itself and that bandaging may have nothing to do with it.

This condition has always brought on a host of legal complications and many times the results of suits are not so fortunate for the physician defendant as in the above case. For this reason, more care should be taken in the management of fracture cases with the idea in mind of preventing these contractures. Fractures about the elbow accompanied by a great amount of soft tissue damage are the ones most commonly followed by ischemic contractures. The degree of flexion that the elbow can stand when being fixed should be carefully judged according to the amount of swelling, discoloration, and other evidences of soft tissue damage present. In a questionable case, it would be far better to fix the elbow in only moderate flexion and take the risk of an improper reduction rather than to get a perfect reduction and fix it in extreme flexion. By following the former method considerable of the swelling will probably have disappeared by the second day and then the degree of flexion can be increased without danger. In all these cases after reduction, the hand should be examined frequently for swelling and the movements tested. Pain or swelling must be relieved by complete removal of constricting elements, and the

*From the Crippled Children's Clinic.

*Read at a meeting of the staff of the Birmingham Baptist Hospital, August 14, 1934.

hand supported in hyperextension to prevent contraction. Some authorities advocate making deep longitudinal incisions in the forearm with the idea of relieving the high tension of the tissues. In most cases this latter procedure has not been found to be necessary.

Most authors agree that the outlook of the results of treatment of an ischemic contracture is not very good for a perfect functional result. In the Crippled Children's Clinic during the past year, we have treated three cases following supracondylar fractures of the humerus with encouraging results in all of them. Two of the cases, seen a few weeks after the fractures had occurred, were treated conservatively according to the usual prescribed method of gradual hyperextension by the use of a malleable steel splint applied to the flexor surface and extending from well up on the forearm to the tips of the fingers. Three times a week the splint was removed and the wrist and the fingers massaged and exercised actively and passively. About once a week the finger pieces of the splint were straightened to a slightly greater degree and at less frequent intervals the area of the splint opposite the wrist was bent so as to extend the hand more. One of these cases was almost completely relieved in 14 weeks and the other is greatly improved at the present time, twelve weeks after the start of treatment. The third case was one of extreme contraction with the wrist flexed at a right angle and the fingers, including the thumb, flexed completely in the palm with no power of movement whatsoever. Under ether anesthesia, through a median incision on the volar surface of the wrist, flexor tendons comprising the superficial group were lengthened by Z-shaped incisions and resutured under desirable tension. Adherent fascia was dissected. This procedure relieved the flexion deformity of the wrist. One month later, the wrist was reopened and the deep group of finger flexor tendons were lengthened in the same manner. The hand and forearm was then fitted with a malleable steel splint similar to the type used in the first two cases and a regime of manipulation exercises and massage instituted. Improvement in the control of the movements of the wrist and fingers was noted one week after this second operation

and function steadily increased. Several months later, a third operation, an osteotomy of the ulna and radius with partial rotation, was done to overcome a faulty carrying angle of the arm which had resulted from the humeral fracture. At the present writing, ten months from this third operation, the patient has about 75% normal function of the hand. This function will probably increase with additional massage and manipulation.

In such contracture cases, conservative methods should always be attempted first, particularly in those cases seen shortly after the contracture has been noted. Operative methods should be reserved for those cases not amenable to correction by manipulation.

CONCLUSIONS

1. The incidence of occurrence of Volkmann's ischemic contracture can be cut down considerably by exercising more care in the treatment of arm fractures.

2. Volkmann's ischemic contractures seem more amenable to treatment than is generally agreed by most authors.

3. Operative treatment of Volkmann's ischemic contracture is supplementary to manipulative treatment.

818 Woodward Building.

Cancer of the Colon—The most common early symptom of rectosigmoid involvement is change in the bowel habit, increasing constipation, a little later constipation alternating with a diarrhea and rectal bleeding. Twenty-five per cent of the patients in this series had undergone some minor surgical treatment within the previous two years to relieve symptoms produced by the malignancy. This is a heavy indictment of our diagnostic thoroughness when we admit that a correct diagnosis could have been made in 100 per cent of these cases by a careful digital and proctoscopic examination. Our mistakes are made by not suspecting and constantly bearing in mind the possibility of this condition in those patients within the cancer age with constipation, rectal bleeding and some pain. Our first thought is hemorrhoids and a casual examination reveals some distended and dilated veins and here we stop. In a majority of cases hemorrhoids are the correct pathology but unless we carry our examination further we will overlook the occasional early cancer.—*Hendrick, New Orleans M. & S. J., Sept. '34.*

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THE PROBLEM OF MEDICAL RELIEF

The attention of the members of our Association is directed to the communication from the Chairman of the Committee on Legislation and Medical Economics which appears in this issue of the Journal, dealing with the medical aspects of Federal relief. With the march of time and as the scope of the problem expands into an almost limitless and continuing field, the medical phases of relief loom bigger and bigger. In many instances, bodily rehabilitation and restoration of health would immediately transpose a dependent individual from the dependent to the independent group and make of him an asset rather than a liability. That life's battles cannot be successfully waged in the face of poor health is axiomatic, and good business would seem to prompt a vigorous frontal attack on the long line of remedial dependents. In this fight, free use must be made of the trained cohorts of the medical profession in order to quickly reduce to a minimum this dependent group. As yet, this phase of the problem—an important phase—has received but small concern, so absorbed have the relief workers been in clearing the deck of the emergencies resulting from acute illnesses. But, even in this aspect of the problem, a woeful lack of planned and cooperative effort has oftentimes been apparent.

The precipitous economic and social changes into which mankind finds itself rather suddenly steeped have created a hesitant and distrustful—not to say resentful—spirit in many. Even the devotees of the learned profession, whose position, in normal times, has been secure in the matter of economic vicissitudes, have, by no means, enjoyed immunity. The average doctor—and it is he to whom attention must be paid—accustomed, in his daily ministrations, to mixing a goodly portion of gratuitous labour with the remunerative leaven, today frequently finds, when balancing his daily ledger sheet, a disconcerting shift in these ingredients; which shift, in truth, may be so pronounced as to threaten his economic security. That some type of medical service for the necessitous and near-necessitous will and should be provided passes without argument.

The chief and immediate concern of the medical profession is to see whatever medical service is rendered to this ever expanding group is of the same high order for which the profession has always stood and that it is delivered through ethical channels. This means that the voice of organized medicine—already too long slumbrous and lackadaisical—must be made articulate in all matters pertaining to the medical aspects of relief.

J. N. B.

REDUCTION OF MORTALITY IN ACUTE APPENDICITIS

Since 1927 detailed studies of the incidence of acute appendicitis in Philadelphia have been made and recently Bower¹ has described the campaign to lessen the number of deaths from this disease in his community. "The Philadelphia County Medical Society, the College of Physicians, the staffs and superintendents of the various hospitals and the Philadelphia Association of Retail Druggists cooperated with the department of public health in the campaign to reduce the time between the onset of symptoms and hospitalization and to prevent the administration of laxatives." Since appendicitis occurs most frequently between the ages of 10 and 20 years, special

1. Bower, J. O.: Acute appendicitis in Philadelphia, J. A. M. A. 102: 813 (March 17) 1934.

efforts were made to reach the high school pupils. "Short talks explaining the dangers of delay in hospitalization and the giving of laxatives were given to several thousand students." Stickers carrying the same warning were also distributed among the students with the request that they be fixed to the covers of school books.

That this campaign has met with much success is borne out by the statistics. From 1928 through 1932, 14,904 cases of acute appendicitis were dealt with in Philadelphia and the mortality has steadily decreased from 5.97 to 3.44 during the five-year period. According to Bower the campaign has resulted in earlier hospitalization, less peritonitis, both localized and spreading, and less frequent administration of purgatives. He also states that there has been a decided improvement in the management of spreading peritonitis by the surgeons during the past three years.

His figures in regard to the administration of purgatives are illuminating and ominous. Of 3,293 patients who had received a laxative, 202, or one in sixteen, died; of 1,305 who did not receive a laxative, twelve, or one in one hundred and nine, died. And of those who received one laxative, one in eighteen died; of those who received more than one, one in ten died.

Bower says "it is an indictment against the profession to be forced to report that fifty-five physicians prescribed laxatives to fifty-five patients with appendicitis, which resulted in four deaths". And he adds that even Hippocrates knew that laxatives could be dangerous in abdominal pain and quotes the latter as warning that "in sharp disease and in their beginning, we ought seldom to use a purging medicine".

It would perhaps be going too far to join Bower in his hope that by 1940 spreading peritonitis of appendiceal origin will be as rare in Philadelphia as is typhoid today, but it cannot be denied that the campaign has been most successful in the reduction of mortality and morbidity. And if such an organized effort to lessen the ravages of appendicitis is succeeding in one great city, why cannot the same idea be carried out in other cities and towns, large or small? Any community in which self-medication is discouraged, in which the physician is sent for

promptly, and in which laxatives are not indiscriminately given can go far along the road which Philadelphia has travelled.

W. W. W.

A NOTE OF WARNING

Statistical material compiled during 1933 for the United States would seem to indicate that by and large, and despite the merciless blows dealt many health budgets, no immediate damage was reflected in an increased death rate. While these statistics do, on their face, appear encouraging, they should not be permitted to instil a false sense of security nor lead to the deduction that many of the activities formerly conducted by health departments were superfluous and might well be dispensed with. The baneful effects of this far-flung economic upheaval will not be fully mirrored in this year's mortality figures nor in the next, nor yet the next. A decade hence, the incriminating finger of a faulty or substandard diet for the growing child may unerringly point the way to the true cause of many physical breakdowns in adult life, foremost among which is likely to be tuberculosis. However, in so far as it pertains to community life in Alabama, already the pernicious and threatening consequences of the depression are being reflected by the appearance, in several of our municipalities, of outbreaks of typhoid fever. Because of the unrelenting efforts which have been put forth during the past fifteen years by Alabama's health department through proper sanitation, safe water supplies and immunisation programs, this disease had all but vanished, save in the more rural and poorly sanitized areas. In 1917, this disease killed 989; in 1933 it killed but 119, the majority of which deaths originated not in urban, but rural, areas. In normal times city dwellers expect and demand from their municipal authorities safety and protection in the basic things of pure water, pure food and safe disposal of human excreta. These three factors constitute the legs of a minimal sanitary tripod upon which must rest all subsequent effort at health building either for the community or the individual. In a predominantly rural state, such as Alabama, it is no easy problem to expand this safety tripod to include the sparsely set-

tled areas of the country side so that all may share in its benefits; and yet this has been the ambition and goal of Alabama's health department. In abnormal times such as we are now passing through, with many municipal and county governments deeply in the red and staggering under an increasing load of unemployment, it is not surprising to find one, and usually two, of the legs of our sanitary tripod tottering and crumbling. In the wake of unemployment comes the shutting off of the water supply to many families on the urban fringes, which condition, if allowed to persist, is sure to spell disaster not only to those immediately concerned, but also to the entire population of any municipality. The economics of the problem here presented must be appreciated by municipal authorities and all necessary steps taken to guard against any weakening of this important leg of the tripod. In an emergency, such as now confronts us, this means complete cooperation between relief workers, health workers, municipal officials and water companies, whether municipally or privately owned. To such cooperation must also be added the civic consciousness of the individual and a willingness on his part to see that he and his family receive the added protection afforded through proper immunisation. Through such united efforts as these the lurking danger of an increased death rate from typhoid fever in Alabama may be averted.

J. N. B.

HEALTH EXAMINATIONS

For about a decade periodic health examinations have been extensively recommended by the Life Extension Institute, life insurance companies, and certain writers in lay publications and many thousands of these examinations have been made by physicians either connected with these organizations or engaged in private practice. Recently the Committee on Public Health¹ of the Massachusetts Medical Society decided to investigate the attitude of some of the doctors in that state toward periodic health examinations and addressed a circular let-

ter to many of them, mostly members of the council of the state medical society. The fifty-odd replies form the basis of the committee's report and make interesting reading.

Says the committee: "On the whole, but with many qualifying reservations, the physicians replying to our letter declared themselves as believing in the value of periodic health examinations." The committee goes on to declare that "the environmental pressures which break one person will not affect another. The resistance to these pressures is largely inherited and entirely beyond our control."

"The wise physician has learned to be cautious about telling any middle-aged person that there is nothing the matter with him," states the committee. And practically everyone will agree that "the physician is more embarrassed by unforeseen death than by any other incident in his practice. . . . Nevertheless, unforeseen death occurs, and if our set-ups, check-ups and follow-ups cannot prevent it, this fact must be plainly made known to the people who are buying health examinations." And "it is no easy matter, on the other hand, to look forward and prophesy the future of vague thoracic pain, indigestion or cough. Nor will it always help in such forecasting to spend relatively large amounts of money on x-ray, electrocardiographic or biochemical studies."

Then follows a brief resume' of the principal causes of death beyond twenty-five years and how much or little can be done to prevent or postpone them. Pneumonia is rated as a seven or eight per cent hazard of death at most ages and "nothing that we can do or say will much change that." The same applies to deaths by accident. Repeated examinations are of some aid in the early diagnosis of cancer, but less so than is commonly believed, especially by the laity. In regard to tuberculosis "early diagnosis is all that we can strive for." We know that the circulatory diseases, including heart disease, arteriosclerosis, diabetes, nephritis and cerebral hemorrhage, increase enormously with passing years, but "telling these people to breathe deeply and have a bowel movement every day isn't going to promise much. We may investigate their constitutional patterns but we cannot

1. The periodic health examination, a communication from the Committee on Public Health (of the Massachusetts Medical Society), New England J. Medicine, 210: 226 (Jan. 25) 1934.

change them. A few things we can do—*we can keep them from getting overweight; we can examine their urines; we can measure their blood pressures.*"

We are also reminded that another weakness of periodic health examinations is the fact that they are apt to appeal primarily to the neurotic and introspective.

Most physicians in private practice will probably agree that "the Periodic Health Examination is a procedure which will occasionally reveal early remedial diseases. It is a luxury, and should be paid for as other luxuries. The committee believes it is unwise to promote it in any other light or put a price upon it, particularly at this time."

"Any intimation that it guarantees future life or health is unwarranted." And the soundest bit of advice is offered in the committee's conclusion "that universal investigation of recently acquired trivial signs and symptoms by the family doctor would be more profitable than the periodic health examination, and that it should be substituted for the periodic health examination in future propaganda."

W. W. W.

TRANSACTIONS OF 1934

A Correction

To The Association:

My attention has been called to an error in the Sixty-First Annual Report of the State Board of Censors as published in the August number of the Journal, page 68.

At the meeting of the Association in Montgomery in April 1933 Doctor R. S. Hill introduced a resolution proposing to amend the Constitution, which resolution, of course, automatically laid over for action by the Board and the Association until the annual meeting of 1934. The Hill Resolution was acted upon by the Board in my absence and, since I was not presiding at the time, the part of the report of the Board to the Association touching this matter was not drafted by me. In my presentation of the report of the Board at the final session of the Association it was stated for reasons given in the report that "the Board feels compelled to decline to recommend the adoption of this (the Hill) resolution."

In the discussion of this recommendation

of the Board before the Association, Doctor Sledge inquired of the Chairman, "May I ask if the recommendation of the Board was unanimous?", to which the Chairman replied, "It was unanimous." This was my information at the time, not being present when the action was taken by the Board, and since there apparently was no one present who raised the issue or questioned the Chairman's answer to Doctor Sledge, the answer to the inquiry passed and went into the record.

I am now informed that Doctor Dan T. McCall of Mobile, a member of the Board who was present at the Board meeting when action was taken on the Hill Resolution, opposed the adoption of the resolution which sought to recommend adverseing the Hill Resolution, Doctor McCall at the time favoring and supporting the Hill Resolution. I am informed further that Doctor McCall was not present on the floor of the Association when the report of the Board was presented and acted upon by the Association and when Doctor Sledge made his inquiry of the Chairman referred to above.

May I reiterate positively that my answer to Doctor Sledge's inquiry to the effect that the action of the Board was unanimous was my information at the time. Since I am now informed that Doctor McCall states that he supported the Hill Resolution and opposed and voted against the resolution seeking to adverse or recommend adverseing the Hill Resolution, I hasten to make the above correction. Since I was not at the time corrected and no issue or question raised as to the correctness of my reply to Doctor Sledge's inquiry, and since I was neither present when the Board took action nor drafted that part of the report relating thereto, I had the impression that only a statement of facts had been made until now Doctor McCall calls attention to the error. I apologize to Doctor Sledge personally, to Doctor McCall and to the Association for the error which without questioning became a part of the record.

Since it is requested that this correction appear in the State Journal, which leads me into print, may I take this method also of conveying my greetings and felicitations to my many good friends of the Association?

Respectfully,

W. D. PARTLOW, M. D.,
Ex-Chairman, State Board of Censors.

Committee on Legislation and Medical Economics

The Committee on Legislation and Medical Economics, under the leadership of its efficient organizer, Dr. A. L. Glaze, established itself as an active agency of the Association during 1933. In its formative period its activities dealt chiefly with select problems of concern to the Association and the public, notably the medical care of the necessitous and matters of legislation.

There are many problems for the Committee to handle but none so important as the care of the indigent on Federal relief. At a meeting of the Committee held in Montgomery on July 7 it was decided to concentrate all present efforts on this particular question. A plan was proposed and discussed at this meeting which would tie the State medical organization in with the Alabama Relief Administration, copy of which has been presented to the Director of the Administration.

Those who have followed the attempts throughout the country to solve the problem of medical relief are aware of the failure of most of the programs now in use. The American Medical Association at its recent meeting in Cleveland gave this matter careful consideration through a specially selected committee. While making no specific recommendations, though appreciating the wide diversity of practices prevailing throughout the United States, the committee did suggest certain cardinal things which should be incorporated in any plan designed to render medical relief; that in any experimental approach made to change or modify present policies and practices careful consideration be given to the following ten items:

"First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

"Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

"Third: Patients must have absolute freedom to choose a duly qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

"Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a 'family physician'. This relation must be the fundamental and dominating feature of any system.

"Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

"Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

"Seventh: Medical service must have no connection with any cash benefits.

"Eighth: Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

"Ninth: Systems for the relief of low income classes should be limited strictly to those below the 'comfort level' standards of incomes.

"Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession".

The one outstanding fact as observed by the Association's Committee on Legislation and Medical Economics, in the failure of all plans so far proposed for medical relief of the necessitous, is that these relief programs have been prepared and promulgated by lay people without adequate counsel from the medical profession whose responsibility it is to render the service. Medically trained people are the only ones who are capable of judging what is adequate medical relief and who is capable of rendering it. The Committee feels there should be one physician on the advisory board of the Alabama Relief Administration and one on the advisory board of each county relief agency. Every county medical society should see that this is accomplished as expeditiously as possible.

The problem of working out a plan for medical relief requires much study. It is necessary to try to understand: 1. Why the Federal Government is giving this relief; 2. What place in its program medical relief occupies; 3. How this service is to be dispensed; 4. The amount of money to be

spent on medical relief; 5. The way this money is to be dispensed.

These questions are discussed in the Journal of the American Medical Association, issue of September 23, 1933, pages 1026 and 1027. The rules and regulations set up by the Federal Government seem to be iron-clad unless it can be shown by the medical profession that other plans are more satisfactory. The above rules and regulations should be read by every practicing physician in Alabama. A thorough knowledge of them would help the county societies in working out their plans.

The plan submitted to and now being studied by the Director of the Alabama Relief Administration proposes to use the present set-up of the Association and tie it to the Administration through a medical liaison officer who will represent the Association and the Administration. In this way the administration of medical relief will be in the hands of a physician who will help each county solve its own problems. The contacts between physicians and the county relief agency will be physician to physician.

This proposed plan cannot be published at present for two reasons: First, the Federal Government is now making a survey of medical service in all states to determine the success or failure of the program, the expense, etc. The State relief administrators are waiting for the report on this survey before approving any plans. Second,

the Federal Government proposes to have each state take over the present relief organization in that state. In the next Legislature in Alabama a plan will be proposed to establish a Bureau of Public Welfare. Thus we may eventually be serving indigents for the State rather than the Federal Government. Our plan will have to be workable under the proposed new set-up.

The plan as proposed and as modified by the Director of the Alabama Relief Administration will be mailed to each member of the Association as soon as it is returned by him. The Committee will desire comment from the members of the Association before making final proposal to the Director.

* * *

The Journal will publish during the coming months articles from this Committee dealing with problems confronting doctors in Alabama. Some of these will probably give only one side of a question, but there will be an open forum in the Journal where comment and discussion can take place. The Journal will thus be a medium of expressing the wishes of the members of the Association to the Committee on Legislation and Medical Economics. We invite articles pertaining to any problem of the profession, as well as comment on articles published.

Please address your correspondence to the Chairman of this Committee or to the Secretary of the Association.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

KNOTTY PROBLEMS IN ADMINISTRATION

Gentle reader, think not that many of the problems presented to the health department are not of an exceedingly momentous nature, requiring, for their proper and unbiased solution, a unique combination of legal, judicial and medical training. Not only do abstruse and complicated questions continuously arise in the field of ditch digging, house screening, privy building and fly swatting to torment the administrator's soul, but ever and anon there bobs into the

picture and clamours for immediate decision a problem such as presented in the following communication. Would you, or would you not, gently dump this into the lap of the State's final arbiter—the Supreme Court?

August 5, 1934

Montgomery, Alabama
to The Board of Healthe

Dear Sir and Friends: I am Riting yu a few Lines For Some infomation. I trey to Be a Law Bidding Sitisan of our Land and Country and I want to no if I am a violating the Law or not. I am a Hurbe Dr. and I compoun the most of my meddison and I make no charges for medison at all. I use nothing that containes aney poisen or Drug Habbet nor any wyede (weed) of aney kinde. I cure olde ulsorated soares on Legs take out tape wormes and

cansors and shugor Dibeties and Lumbego and take out Gall Stones and the asmer and Hy blood preshure and Dropsey and maney otther things. I use the hurbes that our Dear Good Lorde poot here on Earth for man and Beast. So I will sclose for This time Hoping to Get a Good Replye Rite soon and fail not

Yourse truly,

R. L. T.
Hartselle, Alabama,
Route One

* * *

THE PUBLIC HEALTH NURSING SERVICE

Forty-eight of Alabama's counties have organized public health service. This service includes that of a public health nurse. The efficiency of such nursing service is dependent upon the careful selection of personnel, an adequate introduction to the field, frequent advisory visits, and the area and population served per nurse. Only two counties, Jefferson and Montgomery, have more than one staff nurse.

The following paragraphs from Jefferson County's annual report are most timely and challenge the thought of every physician interested in the development of public health in his own county.

"An important element in obtaining nursing service of high grade is the selection of the personnel; a second is supervision directed to continuous growth of the individual; and a third is a continuous program of staff education. All three of these elements have been a fundamental part of the administration of the public health nursing program since its inception in an effort to insure a high quality of service at all times. Since the fundamental principle of public health nursing is teaching the patient and the members of his family how to apply the principles of personal and community hygiene to his own situation, the effectiveness of the program is more dependent upon the factor of quality of service than upon numbers served. The patient and his family derive benefits from the effective application of health instruction which are impossible to measure statistically. Furthermore in obtaining a practical functioning knowledge of health, the family has acquired an equipment for the conservation of its health which financial reverses can neither remove or destroy.

"The need for such service at public expense is undoubtedly greater during times of economic distress when large groups of the population are unable to provide it for themselves and in general the service can be administered more economically for the larger number than for the few. However there is usually drastic retrenchment rather than expansion of services directed to conservation of health, a policy which eventually results in an impoverishment of the health resources of the community and deprives large numbers of its citizens of services vital to their essential welfare."¹

F. C. M.

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

DENGUE FEVER

Since the potential danger of an outbreak of dengue fever has been realized, the Bureau of Laboratories has been requested in several instances to assist in the diagnosis of suspected cases. Unfortunately, microscopic examinations of blood or body fluids and immunologic reactions are of no value for the routine diagnosis of this disease and the decision must be made mostly from clinical observations. The leucocyte count is the only laboratory finding that supplies important information.

According to Armstrong* "the white-blood count is quite characteristic in dengue. Practically all clinicians who have studied this feature of the disease have noted marked leucopenia, with reduction of the percentage of neutrophiles, accompanied by a relative and absolute increase in the mononuclear elements, especially the lymphocytes. The percentages of large and small lymphocytes vary considerably in different cases and in the same case at different times. So, while they do behave in a somewhat characteristic fashion, they are of less importance from a diagnostic standpoint than is the leucopenia with reduction of the polymorphs."

1. Annual Report, Division of Rural Child Hygiene and Public Health Nursing, Jefferson County Board of Health, Birmingham, 1933.

*Armstrong, C.: Dengue Fever, Reprint No. 856, Public Health Reports, August 3, 1923.

Vedder² has made an extensive study of this shift in the leucocyte count. The following table gives the average of a number of counts on the different days of the disease.

DAY OF DISEASE	Number of Counts	Polys.	S. lymps.	L. lmps.	L. Monos.	Eosinos.	Basos.
First	24	64.68	26.59	6.40	1.44	0.49	0.19
Second	28	43.46	49.38	5.00	.97	.62	.23
Third	27	37.14	53.21	7.28	1.11	.99	.27
Fourth	24	38.35	51.04	6.56	1.34	1.57	.42
Fifth	22	37.38	51.28	7.58	.99	2.46	.31
Sixth	21	33.62	52.48	9.79	1.54	1.79	.27
Seventh	18	35.66	50.71	9.29	1.96	2.20	.16
Eighth	10	39.82	43.22	10.98	1.41	2.72	.29

There is some dispute as to the value of the red count and hemoglobin determinations in dengue. Certain workers claim that there is no change in the red cells while others report a reduction in these components.

BUREAU OF PREVENTABLE DISEASE CONTROL

D. G. Gill, M. D., Director

TUBERCULOSIS CLINICS

The diagnostic service offered to the medical profession of the State through the travelling chest clinic has been in operation almost four years and has reached all parts of Alabama. The demand for this service has rendered it difficult for a single clinic to adequately serve all counties, so in an attempt to increase the volume of work handled, without lowering the standards set up, certain changes in methods have been adopted.

The x-ray is recognized today as the greatest single aid in the early diagnosis of pulmonary tuberculosis and as the one procedure that will detect early changes. Accordingly, the clinic now consists of two units, an advance clinic for the taking of histories and x-rays, and a later clinic at which physical examinations can be made on cases showing any x-ray evidence of disease. At this later clinic the referring physician can see the x-ray films and can discuss the case with the clinician if he so desires.

2. Vedder, E. B.: The leucocytes in dengue, New York Journal 86: 203-206, 1907.

The general considerations governing this clinic service are:

PLAN OF OPERATION OF TRAVELING CHEST CLINIC AUGUST 1st, 1934

1. The travelling chest clinic is operated as a consultation service to the physicians of Alabama to aid in their diagnosis of pulmonary tuberculosis.

2. In order to provide a clinic service at least twice a year to all counties desiring such a service it is necessary to change our present plan of operation.

3. In brief, two or three times as many patients as formerly can be handled by dispensing with the routine physical examination, saving this procedure for those requiring it.

4. As formerly, this clinic will be held only with the consent and cooperation of the County Medical Society.

5. Admission to the clinic is granted only to those referred by their physicians as suspected of having pulmonary tuberculosis and to contacts of known cases. The tuberculin testing of contacts must be done prior to the clinic's visit.

6. With few exceptions, cases that have been previously diagnosed by the clinic will not be re-examined since the clinic is for diagnosis and classification. Cases that have been diagnosed "suspect" should be re-examined at the next clinic.

7. In brief, the plan of operation is to have:

- A preliminary clinic at which the patient's history will be taken and an x-ray made.
- After the clinician has read the x-ray and correlated it with the history, a list of those who are to return to a second clinic will be sent out to the county.
- About two weeks after the first clinic, the clinician will enter the county to do a physical examination on the selected cases. The county nurse will assist the clinician in the preparation of the patients for examination.
- The physicians are urged to come in at this time to look over the x-rays on cases and discuss the data at hand.
- By having the patients come in promptly, about 28-30 patients can be

handled each day. This means that each county should provide 55-60 cases for the two days.

8. Two or more counties can be visited each week, so to conserve travel it will be necessary to schedule adjoining counties jointly. This will not permit the same elasticity in arranging schedules but dates will have to be assigned to counties.

9. All reports of the examination will be made to the referring physician and under no circumstances will the results be given to the patient by anyone other than the referring physician.

10. The physician can borrow the x-ray on any of his cases at any time.

11. The clinician welcomes opportunities to discuss the various phases of tuberculosis with the physicians individually or at the regular meetings of the county medical societies.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

HOUSE SCREENING IN THE PREVENTION OF DISEASE

It has not been many years since General Gorgas and his corps of able assistants at Panama demonstrated the practical value of screening in the control of insect-borne diseases. The United States completed the Panama Canal where, earlier, the French had failed, due in a measure, it is said, to inability to protect the workmen against the ravages of malaria and yellow fever. The success of the United States in combating these diseases may be attributed, in part, to the liberal use of screens.

The accomplishments at Panama served to stimulate interest in malaria control in the United States. House screening was one of the control measures advocated. It was not a difficult matter to prevail on owners to screen the better type houses. Screening of this group has advanced rapidly to the point where it is unusual to find a house of this type which has not been screened. A high light of progress, in this connection, was the successful efforts of various health organizations of the Nation in prevailing upon the manufacturers of

screen cloth to manufacture a standard product. This product is now known as 16-mesh galvanized screen cloth. At present it is difficult to buy an inferior cloth of coarser mesh.

While much has been accomplished there yet remains in Alabama a large number of unscreened houses, particularly among the tenant group. Some of these houses might well be placed in the so-called "unscreenable" class. A considerable per cent, however, could be effectively screened at little cost. The malaria problem in Alabama, today, exists largely among the rural population occupying these unscreened houses.

For several years the health department has advocated and attempted to promote screening in the malarious areas where drainage could not be effected to limit the problem. An extensive screening and educational program was initiated in 1929 through cooperation with the U. S. Public Health Service. Some visible results were secured before the program was discontinued in 1931. During this time the department published a bulletin setting out a practical procedure for house screening. Copies of this bulletin are available upon request.

The question is often asked as to what may be accomplished through screening. From numbers of surveys made in different parts of the State conclusion has been reached that malaria may be reduced at least 50% through screening. There is no reason why we should not expect some reduction in diseases which may be borne by flies.

Hope of the ultimate in insect proofing lies in new construction. Tongue-and-groove flooring and ceiling are practically essential in making a house insect proof through screening. Builders at present appear to be giving more thought to making new houses insect proof, and in this fact lies hope of eventually securing the most from improved housing in the control of insect-borne disease.

C. C. K.

Cancer of the Larynx—In all cases of new growths in the larynx, the final decision must be made by taking a piece of the growth for microscopical study. This section is easily obtained through a direct laryngoscope, can be quickly made and is not dangerous to the patient.—*Looper, South. M. J., Sept. '34.*

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE
DISEASES IN ALABAMA

	June	July	Estimated Expectancy July
Typhoid	63	143	157
Typhus	18	24	7
Malaria	383	1158	417
Smallpox	1	1	28
Measles	1393	274	115
Scarlet fever	26	24	39
Whooping cough	241	144	169
Diphtheria	50	55	37
Influenza	48	6	22
Mumps	41	16	26
Poliomyelitis	5	4	5
Encephalitis	2	3	2
Chickenpox	43	3	21
Tetanus	4	4	5
Tuberculosis	268	263	373
Pellagra	82	44	130
Meningitis	1	0	4
Pneumonia	117	67	56
Syphilis (private cases)	319	189	147
Chaneroid (private cases)	1	2	8
Gonorrhea (private cases)	201	193	185
Ophthalmia neonatorum	2	2	2
Trachoma	0	0	0
Tularemia	0	1	0
Undulant fever	2	4	0
Dengue	0	0	0
Amebic dysentery	3	5	0
Rabies	0	1	0

*As reported by physicians and including deaths not reported as cases.
The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS
ALABAMA, JUNE 1934

CAUSES	Number of Deaths Registered June 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	June 1934	June 1933	June 1932
ALL CAUSES	1266	1172	2438	1070.8	994.3	1017.7
Typhoid fever	6	8	14	6.1	7.1	3.1
Typhus fever	2		2	0.9	1.8	
Smallpox						
Measles	40	14	54	23.7	3.1	
Scarlet fever		2	2	0.9	0.4	0.9
Whooping cough	29	17	46	20.2	8.4	12.1
Diphtheria	4	1	5	2.2		1.8
Influenza	9	10	19	8.3	12.4	13.5
Pneumonia, all forms	59	44	103	45.2	41.7	36.4
Poliomyelitis	2	1	3	1.3		0.9
Tetanus	1		1	0.4	2.7	1.8
Tuberculosis, all forms	45	92	137	60.2	69.2	90.9
Tuberculosis, pulmonary	44	87	131	57.5	61.3	83.7
Malaria	12	11	23	10.1	7.5	8.1
Cancer, all forms	113	57	170	74.7	57.7	63.9
Diabetes mellitus	18	3	21	9.2	8.0	9.0
Pellagra	10	18	28	12.3	16.4	18.0
Cerebral hemorrhage, apoplexy	76	62	138	60.6	57.3	58.5
Diseases of heart	192	137	329	144.5	127.8	110.2
Diarrhea and enteritis						
Under 2 years	78	48	126	55.3	43.5	29.2
2 years and over	28	13	41	18.0	16.9	9.9
Nephritis	95	76	171	75.1	75.0	85.9
Puerperal state, total	15	18	33	14.5	12.9	19.8
Puerperal septicemia	4	7	11	4.8	4.0	5.4
Congenital malformations	6	2	8	3.5	5.8	7.6
Congenital debility and other diseases of early infancy	52	43	95	41.7	47.5	53.5
Senility	9	34	43	18.9	20.9	13.9
Suicides	11	2	13	5.7	7.1	8.5
Homicides	15	47	62	27.2	24.4	25.2
Accidental burns	4	1	5	2.2	1.8	1.8
Accidental drownings	9	5	14	6.1	5.8	7.2
Accidental traumatism						
by firearms	2	6	8	3.5	2.7	0.9
Mine accidents		1	1	0.4	3.5	1.3
Railroad accidents	6	6	12	5.3	4.4	2.7
Automobile accidents	35	15	50	22.0	15.1	10.8
Other external causes	40	21	61	26.8	20.0	24.7
Other specified causes	161	179	340	149.3	154.5	173.2
Ill-defined and unknown causes	82	178	260	114.2	111.0	112.9

Book Abstracts and Reviews

Postures and Practices During Labor Among Primitive Peoples, by Julius Jarcho, M. D., F. A. C. S. Paul B. Hoeber Inc., New York City. 1934. 175 pages with 130 illustrations. Cloth. Net \$3.50.

This book is based on the thesis that primitive women have learned through instinct or experience to assume certain postures during labor and that these postures must have some medical value in affording easy delivery. The author has described and illustrated characteristic positions assumed by women of many different tribes and cultures and has shown how many of these postures assist delivery either by increasing the diameter of the pelvis or by heightening the effectiveness of the abdominal and uterine tracts. The increase of the antero-posterior diameter of the pelvic inlet in the Walcher position, the increase in the diameter of the pelvic outlet in the exaggerated lithotomy position, the increase in the effectiveness of the abdominal and uterine contraction in the kneeling and squatting positions, and the support of the relaxed abdomen in the rocking chair position are examples of the scientific application of the obstetric knowledge of primitive races.

The author describes the frequency with which the custom of drinking the urine passed postpartum and of eating the placenta was encountered in almost every species of primate. He suggests that there may be some value in this procedure, the explanation of which will probably be solved by further investigation into the hormone found in the urine and placenta.

Not only is the book extremely fascinating but it contains observations of practical value. Perhaps in other customs which are prevalent among superstitious races, there will be found other practical methods of treatment which, because of our over-scientific attitude, we have sneered at and ridiculed in the past.

C. K. W.

• A Text-Book of Histology: By Alexander A. Maximow, Late Professor of Anatomy, University of Chicago; and Wilson Bloom, Associate Professor of Anatomy, University of Chicago. Completely revised with 662 pages with 530 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1934. Cloth. \$7.00 net.

Most text-books of histology are but stereotype repetitions of other works. However, this work is highly competent and completely covers its field. It is authoritative, extensively and beautifully illustrated and adequately indexed.

The author presents not only the microscopic architecture of the various tissues and organs of the body but he also synchronizes his descriptions with the physiologic mechanisms. He has given to the subject of histology a perspective that virtually animates it. He has written one of the most practical and concise text-books of histology in any language. It is well documented and based on authentic sources.

The exceptional completeness of the book recommends it to the medical student as well as to the graduate. It contains no loose generalizations. It leaves little to be desired in the way of clarity.

A. T.

Truth About Medicines

ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following products have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

Specialists' Model Sollux Radiant Heat Lamp.—This unit is particularly adapted for ear and throat work or for local application of radiant heat. The lamp employs a 300 watt tungsten filament bulb. It comes in two styles: the stand type and the desk type. Hanovia Chemical & Manufacturing Co., Newark, N. J.

Hospital Model Sollux Radiant Heat Lamp.—This lamp is recommended for use in a physician's office or a general hospital. It is claimed that at a distance of 48 inches with an area coverage 5 feet in diameter, points on a plane surface perpendicular to the primary direction of the rays will experience intensity deviations of less than 20 per cent. Hanovia Chemical & Manufacturing Co., Newark, N. J.

Office Model Sollux Radiant Heat Lamp.—This lamp is designed to provide the physician and the specialist with a moderately priced office infra-red lamp of exceptional flexibility and therapeutic efficiency. Hanovia Chemical & Manufacturing Co., Newark, N. J.

Burdick Dual Zoalite.—This unit was developed and designed to provide a source of infra-red to meet treatment conditions for which infra-red radiation is indicated. It is equipped with a small localizing unit. The firm claims that by means of this localizing unit it is no longer necessary to heat the entire head when applying infra-red to the ear or other localized area around the head. (Jour. A. M. A., August 4, 1934, p. 339.)

Altherm Eye Pad.—The Altherm Eye Pad is recommended as a convenient device for applying heat to the eye. The mixture (heat-retaining element) used in the pad is nonirritating and noninflammable. The pad is prepared for therapeutic use by placing it in boiling water and boiling it for not more than ten minutes. After this the ele-

ment will be found to be partially liquefied, and during recrystallization it will give off heat at a comparatively even temperature for approximately forty-five minutes, after which the element will have solidified completely. The temperature will range from approximately 120 down to approximately 110 Fahrenheit. The E. B. Meyrowitz Surgical Instruments Co., Inc., New York, N. Y. (Jour. A. M. A., August 25, 1934, p. 563.)

PROPAGANDA FOR REFORM

Vitamin D and Calcium in Foods.—The attention given to the vitamin D potency of cod liver oil and halibut liver oil with viosterol, and of egg yolk and liver has raised the question of the efficacy as antirachitic and mineralizing agents of some common foods less widely heralded in this respect. Kohman, Sanborn, Eddy and Gurin (J. Indust. & Engin. Chem. 26: 758 (July) 1934) have reported the results of an experimental study on this question. These observations indicate that in foods chosen to be generally representative of our national dietary there may be an appreciable lack of calcium. However, the deleterious influence of indigestible residue on calcium absorption can be largely overcome by providing an additional source of this mineral element in readily available form. Furthermore, it appears that in ordinary dietary mixtures chosen in conformity with modern precepts of nutrition there are present adequate amounts of the appropriate accessory food factors for the promotion of satisfactory utilization of calcium and phosphorus. (Jour. A. M. A., August 11, 1934, p. 414.)

Iron Claims for Foods.—The Committee on Foods reports that to warrant an iron claim, a food in an amount that most adults would consume easily in a single day should furnish a substantial proportion of the daily iron requirement (approximately 15 mg. Fe). Iron claims should be restricted to simple statements of the value of the product in comparison with common foods for contributing iron for dietary needs. They should not involve statements of any order pertaining to blood building, because of their therapeutic significance or implications. (Jour. A. M. A., April 21, 1934, p. 1300.)

Miscellany

ADVERTISERS' NOTES

MEDICAL MEN FOR THINGS MEDICAL

"The principle that medical men should be the ones to exercise control over medical service is almost axiomatic. Yet there is confusion of thought where there could be straight thinking if all the facts were brought out and faced.

"There are those who would virtually make the physician an employee of the state. They fail to recognize the utter incompatibility between the American political system and the methods of truly professional men.

"There are those who complain about the scarcity of physicians. Yet it is a fact that while England has one doctor for 1,490 persons, France one for 1,690, and Sweden one for 2,890, there is in the United States one physician for every 780 persons.

"There are those who denounce our hospitals on the score of high charges for service, but the truth is that the cost per day of a hospital room with meals and the day and night personal ministrations required by an invalid is usually less than a well person would pay for mere room and meals in a first-class hotel.

"There are those who would like to let down the bars to self-medication. Yet the fact is that during the last few generations the average span of human life has been extended ten years, chiefly through the discoveries of medical science.

"Physicians know these things. They spend years acquiring an education on the care and repair of the most marvelous mechanism on earth—the human body. But they would readily admit that this education does not qualify them for telling railroad executives how to solve transportation problems or impressarios how to stage an opera. The work of the world needs many kinds of specialized knowledge, but certain it is that each field of work will be best managed by those who know it best."—From Mead Johnson & Company's announcement in *Hygeia*, August 1934.

COCOMALT

Investigators who have made a special study of fatigue and general debility report that these conditions generally can be corrected by proper diet and rest.

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Cocomalt is accepted by the Committee on Foods of the American Medical Association. Laboratory analyses show that Cocomalt, when made as directed, increases the protein content of milk 45%, the carbohydrate content 184%, the mineral content (calcium and phosphorus) 48%. It contains not less than 30 Steenbock (81 U. S. P. revised) units of Vitamin D per ounce—the amount used to make one glass or cup. It is licensed by the Wisconsin University Alumni Research Foundation.

The importance of milk as part of the dietary in postoperative and convalescent cases cannot be over-estimated. It is—and rightly so—the principal dependence of the diet.

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MOTHER:

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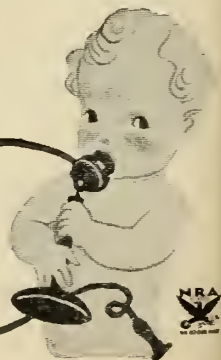
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THE PHYSICIAN'S RELATION TO CANCER*

By

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Cancer is a universal disease. It is found at all ages, in all races of mankind. It is a problem of medical education, not only of physicians but also of laymen. Fatalities from cancer are increasing yearly. It is therefore evident that we, as physicians, must be more alert if any semblance of control is to be attained. Further, since early cancer is curable, it must be our endeavor to diagnose the disease in its incipient stage, if progress is to be made. If the present means of diagnosing and treating cancer were universally applied, at the earliest period, the actual incidence of the malady should be reduced from eighty to seventeen per cent, and the actual cures should be increased from ten to sixty per cent¹. In 1930 there were 115,265 deaths due to cancer in the United States. Of these, 3,019 (2.6%) were due to skin cancers; 3,543 (3.0%) were due to cancers originating in the buccal cavity; 10,912 (9.4%) were due to cancers of the breast and 16,422 (14.2%) were due to uterine cancers. It is therefore seen that approximately one-third of the deaths due to cancer arise in organs easily examined, both manually and visually, and that it is here that we may expect to make the greatest progress.

Cancer usually begins in a group of cells in a single spot. The control of cancer is based largely on this conception of its orig-

in. At the beginning of the process, the cells in the specific area are not cancer cells. They may be "cell rests", displaced during embryonic life, or they may be indistinguishable from surrounding cells. The change from the "cell rest" or from the normal cells is the result of injury or irritation, physical or chemical, usually repeated over a long period. As a result, the cells that were originally non-cancerous become cancerous. Many observations confirm this belief. An example of the "cell rest" is seen in the pigmented mole. It may persist for years without any change. Following an injury, or repeated injuries, it enlarges, spreads and soon metastasizes. It has become a cancer. Similarly, a chronic cervicitis may persist as such for years. Then there is an overgrowth of the tissues; a cauliflower mass appears or an ulcer develops; the inflammatory lesion has become a malignant one. Leukoplakic spots on mucous membranes are frequently the forerunners of cancer. It is the only stage in which we can feel sure of a cure.

Since the cure of cancer depends upon the recognition of the precancerous lesions and the recognition of the malignant ones in their earliest stage, we are dependent upon the physician who sees the patient most frequently to obtain an early diagnosis. This is usually the physician doing general practice. Much of the health of any community depends upon the acuity of the attending physician. In cancer this is greater than in almost any other disease. If a cancer patient comes for treatment with a self-made diagnosis, the outcome is usually hopeless. But if the attending physician sends the patient with a diagnosis of a "suspicious" lesion, the hope that it is early enough to anticipate an ultimate cure may frequently be entertained.

*Part 1 of a symposium on cancer, presented to the Association in annual session, Birmingham, April 18, 1934.

1. Bloodgood, J. C.: Cancer as a world problem. New York State J. Med. 30: 255-259, March 1, '30.

Cancer patients consulting the physician may be divided into four groups²:

- (1). Those presenting precancerous lesions.
- (2). Those presenting obvious cancer.
- (3). Those presenting symptoms suggestive of cancer.
- (4). Those presenting no symptoms suggestive of cancer but who have cancer.

As previously intimated, cancer frequently begins in a single spot. The change from the non-cancerous to the cancerous stage is ordinarily a slow process, not an abrupt change. It is the result of repeated injuries, be they physical or chemical. The occurrence of cancer may often be prevented if chronic inflammatory lesions are properly treated or removed. Keratoses seen on the skin of elderly patients should be removed before they become malignant. Pigmented moles frequently become malignant if subjected to irritation. Many of these may be removed while in the quiescent stage but are controlled with difficulty once they become malignant. Burns which have become infected, and remain infected over a long period, are prone to present malignant change in later years. The need for preventing this infection becomes obvious. Surgical removal of the scar, or covering larger burns with suitable skin grafts, will do much to prevent malignant change in later years. Any chronic ulcer may become malignant.

Certain occupations cause malignant changes in the skin due to constant irritation; for example, tar and other petroleum products. Similarly with those handling radium and its products and x-rays. Any chronic discharge from the nose should be held in suspicion and carefully checked by a competent specialist. Bad teeth or poorly fitting plates, constantly irritating adjacent soft tissues, excessive use of tobacco, uncleanliness in the mouth and syphilis are frequently responsible for cancer of the buccal cavity. Should they be found, their correction should be insisted upon. Leukoplakic spots should be closely watched. If they do not respond to hygienic measures they should be removed. Cancers of the breast

frequently follow chronic inflammatory lesions of that organ. Any discharge from the nipple should be regarded with suspicion. A lump in the breast should always be regarded as cancer and treated accordingly, until it is proven otherwise.

In penile cancer there is always a history of previous long standing chronic infection. Circumcision has practically eliminated cancer of the penis among Jews. Leukoplakia of the vulva is the earliest sign of cancer in this region. It is also the only curable stage. Lacerations of the cervix with erosions frequently exist for years before there is malignant change. The complete repair of these chronically inflamed cervixes would do much to eliminate cancer in this locality. In the intestinal tract and in the urinary tract the appearance of blood should be a signal for a very minute examination. Many early or even precancerous lesions may be found in attempting to discover the cause of the hemorrhage. Since it has been shown that cancer sometimes develops in ulcers of the stomach, this may be obviated by the excision of the ulcer, if possible. This may also mean the removal of an early cancer which was not suspected.

From the foregoing it is seen that the alert physician may do much to prevent cancer. But it is essential that the patient present himself for examination before the lesion is advanced, if any great progress is to be made. It is therefore seen that periodic examinations are the only real safeguard. This examination must be complete. Since the patient may not consider certain symptoms worth mentioning, the discovery of a lesion will depend upon the completeness of the examination and the diligence of the physician. Even though no cancerous or precancerous lesions are seen, the periodic examination gives the physician an opportunity to warn the patient of habits that are likely to predispose to the formation of cancer.

In the preceding group the need for keen observation has been stressed so that lesions, which are considered trivial by the patient or which have not been noticed at all, may be discovered and properly treated. In the next group, those presenting obvious cancer, the patient usually has some lesion which has attracted attention, be it

2. Ewing, James: The doctor and the cancer patient, a publication of the American Society for the Control of Cancer.

a lump, a sore spot or a discharge that has persisted for some time. They realize that there is something wrong which needs attention. It is now the duty of the physician to determine the character and extent of the lesion. If the cancer is to be diagnosed early, the part must be inspected as well as palpated, if it can be seen. When cancer of the cervix, for example, has advanced to the stage where it can be diagnosed by palpation alone, it is usually too far advanced to expect a cure. Certainly no cancer of the cervix will be detected in its early stage by the simple expedient of talking to the patient. The examination should not be confined to the part complained of by the patient. The symptoms complained of may be due to pathology elsewhere. A persistent cough may be due to metastasis in the lungs from a cancer in some distant organ.

Having examined the patient and found the lesion, it is necessary to decide if it is cancer. It sometimes requires considerable experience to diagnose established cancer. Too much time should not be consumed in arriving at a diagnosis. Delay is dangerous in malignant lesions. This is particularly true in cancers of the tongue and those involving the breast where a curable lesion may reach an incurable stage within a few weeks. If the attending physician cannot arrive at a definite diagnosis, he should refer the patient to a consultant, or, better still, to a clinic whose personnel is familiar with the vagaries of malignant diseases. Cancer is rapidly becoming a disease to be treated by a group rather than by a single individual. The case should be handled only by the physician who can carry through effective treatment and who can deal with metastases and recurrences as they appear.

Many mistakes are made in the handling of obvious cancer. Biopsies are frequently done to facilitate diagnosis. They may be a boon or a bane. Much harm can be done by hasty resort to biopsy. It may be done incorrectly. Many tumors should never be incised. Even the excision of isolated tumors may mean cutting across channels of dissemination (blood or lymph) already invaded. The practice of removing in the office small tumors of the breast, especially in young women, is widespread. It is frequently followed by recurrence and metas-

tasis, rendering a curable lesion incurable. It is considerably more safe to resort to therapeutic or prophylactic irradiation before the biopsy is done. Sometimes, because of the response to the irradiation, it renders the biopsy unnecessary. It probably makes surgical interference more safe. It certainly does not make it any less so. Malignant tumors often recede promptly after irradiation and the operation to be performed is made safer.

Irritating topical applications should not be used in treating suspicious lesions. Nitrate of silver is frequently used in the treatment of chronic ulceration. It never cures, but always aggravates, cancer. Before any major operation for cancer is performed, a clear film of the lungs should be obtained. It is of little ultimate value to remove a tumor which has already metastasized to the lung. This does not necessarily apply to those advanced lesions where the local lesion is removed for the comfort of the patient, and not with an intention to attempt a cure. It is frequently necessary to perform an exploratory operation to definitely diagnose an obscure abdominal tumor. Again, it is better to resort to preliminary irradiation before operation to lessen the likelihood of disseminating cancerous emboli.

The time is past when the mere ability to perform a standard surgical operation justifies a surgeon in undertaking the treatment of many forms of cancer.² A report that the average operative mortality for cancer of the rectum in nineteen American cities, with a population of about 100,000, is 45%, while the mortality of many specialists is only 5% to 10%, emphasizes this fact.

In the third group the patient complains of symptoms suggestive of cancer. It is then up to the physician to determine whether or not cancer is present. The patient may present nothing more than enlarged cervical glands. Here again a careful history is of considerable importance. The adenopathy may be due to an infected throat, tuberculosis, glandular fever, Hodgkin's disease or a metastasis from a malignant lesion in the mouth, nose, pharynx or larynx. A careful examination of the areas drained by these glands is the first step. A complete examination may be necessary for a definite diagnosis. When

faced with this problem, biopsy is usually considered. Dr. Ewing, of Memorial Hospital, commenting on this subject, says: "The common practice of immediately excising a cervical node for diagnosis is to be discouraged. Radiation is the best treatment of most of these cases as well as a good diagnostic method. Surgery can always be employed later"². Lymphosarcoma recedes rapidly following radiation, Hodgkin's disease less rapidly, tuberculosis slowly and metastases very slowly.

Tumors within the skull are difficult to diagnose. Persistent headache, visual disturbances and vomiting are the outstanding symptoms. Occasionally disturbances in muscle function will offer some help. Radiographic examination may or may not be of value. After a diagnosis of intracranial tumor has been established it is necessary to determine whether it is primary within the skull or a metastasis from elsewhere. Any chronic discharge from the nasal passages, particularly if bloody, should be regarded with suspicion. Pains and swelling frequently accompany the discharge. A thorough examination of the entire nasopharynx by an expert is necessary if cancer of the nasal mucous membrane, sinuses or pharynx is to be excluded. A single enlarged tonsil may mean a lymphosarcoma which should be treated by irradiation rather than removal. The first symptom of laryngeal malignancy may be the "signal node" in the neck, or hoarseness may be the first symptom. Here again the service of one familiar with the anatomic structures is necessary if an early diagnosis is to be made.

Cancer of the base of the tongue or of the tonsil is very difficult to diagnose in the early stage. The only safe procedure is to regard all indurated ulcers of the tongue and floor of the mouth as cancerous until proven otherwise by biopsy. It is entirely possible for a patient to develop cancer of the tongue, floor of the mouth, gum or cheek and at the same time have a positive Wassermann. Valuable time is lost if one waits until the effects of anti-syphilitic treatment are determined before a biopsy is made. Persistent cough, unaffected by any treatment, particularly if accompanied by sputum tinged with blood, should make one suspicious of malignancy

in the lung if other usual symptoms of tuberculosis are not present. Again, having made a diagnosis of lung tumor, it is necessary to determine whether it is primary or metastatic.

Malignancy in the gastro-intestinal tract remains a difficult problem in diagnosis. The stools should be searched for blood. X-ray examination affords the earliest diagnosis, but early lesions will be discovered only when the patient is examined for trivial symptoms. When the symptoms are advanced, the diagnosis is only of academic interest. Bleeding from hemorrhoids frequently masks the earliest symptoms of malignancy in the rectum and colon. Here again visualization by the trained specialist is necessary if an early diagnosis is to be obtained. Similarly in the urinary tract, blood in the urine, even though it may be microscopic, is one of the earliest signs of malignancy, as well as one of the most persistent. In the field of osteology, any persistent swelling or pain should be held in suspicion until a clear x-ray film eliminates the possibility of tumor.

The atypical cancer, though infrequent, is the most difficult to diagnose. It is a well established fact that the body can tolerate the growth of malignant tumors without any disturbances so long as the tumor tissue is well nourished and does not interfere mechanically with any function. The patient may have an established or well advanced cancer and yet appear to be in perfect health. Frequently the symptoms from which they suffer are easily attributed to other diseases. Many of you are familiar with the patient who presents only a marked anemia with low gastric acidity or anacidity, suggestive of pernicious anemia. A most exacting examination fails to reveal a palpable tumor. X-ray examination of the gastro-intestinal tract may reveal a filling defect in the stomach which is obviously malignant. Or, with the same symptoms, x-ray examination may reveal a stomach entirely normal in outline with no sign of cancer. The entire tract may appear normal with the motor meal, but complete filling of the colon with a barium enema reveals a tumor of the cecum. Enlargement near a joint may be treated for some time as an arthritic lesion, only to have a giant cell sarcoma or some similar lesion

demonstrated on the first radiograph made. Among 100 cases of bone sarcoma analyzed at the Memorial Hospital in New York, only 18 received a diagnosis of sarcoma by the first physician consulted².

The value of a history of previous disease and treatment cannot be overemphasized. A woman presents herself because of persistent pain in the hip. Focal infection is sought for diligently. Abscessed teeth and obviously infected tonsils are removed, but the pain persists. A few weeks or months later, a trivial accident results in a fracture of the painful member and a radiograph reveals a pathologic fracture through a metastatic cancer in the femur. It is then learned that the patient had a breast removed six or eight years previously while living in another city.

The "cancer period" or "cancer age" is spoken of so frequently that cancer is often overlooked or not even considered in the young, until it is hopelessly advanced. Several months ago the chest of a man in the twenties was x-rayed because of persistent cough and loss of weight. A single glance at the film was sufficient to make a diagnosis of metastatic malignancy. Until that time there was no thought of a malignant condition. On very careful examination, one testicle was found slightly enlarged. Subsequent development left no doubt in the minds of those treating him that here was a very malignant type of testicular tumor, metastasizing early. No age is immune. In young children, cancer is nearly always overlooked until it has become advanced. In addition to the foregoing, there are many rare tumors, not suspected because so few are seen. Thus it is evident that in this group the ability of the physician is exerted to the utmost if an early diagnosis is to be made.

In closing, the plight of the advanced cancer patient is mentioned to enlist the sympathy of the physician attending him. It is most unfortunate that so many physicians take a hopeless attitude when called upon to treat one of these unfortunate individuals. They live mostly upon hope, and it is grossly unfair, even though true, to let these patients know that there is nothing that can be done for them when they come for treatment and advice. Many of the advanced malignancies can be made

much more comfortable in their last months by the judicious use of surgery and radiation combined. Help them. If the physician does not, there is always a "quack" near by who is more than willing to prey upon the credulity of these unfortunates.

703 Medical Arts Building.

POTENTIALITIES OF PRECANCEROUS LESIONS OF THE SKIN*

By
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I wish to speak of the potentialities of apparently harmless conditions of the skin, which, if neglected, may possibly become malignant. Technicalities of dermatology will be avoided as much as possible, and hair-splitting distinctions in histopathology will be given no place. No time will be given to theory, but an attempt will be made to give a practical and plain account of the etiology, prophylaxis and treatment of precancerous conditions, confining myself to the clinical facts, and adding only a few words in reference to the treatment of the malignancies resulting from neglect.

The precancerous conditions of the skin, other than moles and warts, are known as senile and seborrheic keratoses. The dermatologists make a distinction between these two conditions but many agree that it is frequently impossible to distinguish them clinically. In a general way, it might be correct to say that senile keratoses are found on the face, ears, neck and hands, and occasionally on the trunk; while seborrheic keratoses are found on the trunk and only occasionally on the face and neck. The seborrheic keratoses (generally found on the chest and shoulders) rarely, though sometimes, becomes malignant. The senile keratoses (generally found on the ears, face, neck and hands) are prone to become malignant; five per cent of them, it has been estimated, undergo epitheliomatous transformation. This, then, is the condition that demands our especial attention as a precancerous lesion of the skin.

Just what is meant by the word keratosis? Keratin is the substance formed in the growing epithelial cells of the skin, that

*Part 2 of a symposium on cancer presented to the Association in annual session, Birmingham, April 18, 1934.

makes the nails in man and the claws and horns of the lower animals. In the skin it collects to form a narrow layer known as the stratum lucidum which separates the moist growing layers of epithelium from the dry scaling layers of the outer skin or corneous or horny layer. A keratosis then is an abnormal development of this horny layer. A senile keratosis is a modification of the horny layer of the skin occurring about the orifices of the grease glands of the skin. Occurring, as has been stated, on the face, ears, neck, and hands, it is evident that these are parts most constantly exposed to the sun. Sailors call them sun-corns. More than forty years ago, Unna, the great pioneer in pathology of the skin, named the condition "sailor's skin." Dr. Norman Duncan called it "shepherd's skin," and of late we find it referred to more and more in this country as "farmer's skin." So we see how necessary it is for the physicians of our State to understand a condition which is so prevalent in the rural population.

A plausible explanation is that constant exposure to the sun's rays produces an overactivity of the grease glands, with a possible modification of their product, causing a constant irritation of the parts and resulting in a proliferation of the horny layer with degenerative changes. It is noticeable that failure to remove this secretion by proper cleanliness adds to the extent and severity of the condition, though, in many cases, especially in women, lack of cleanliness is not responsible for the condition.

The term senile is not correct as cases can be seen sometimes as early as the thirtieth year or even younger, but they are more commonly found after the fortieth year. These lesions begin as a slight darkening of the skin, brownish or grayish black. This area, from the size of a pea to size of a dime, becomes slightly rough and sometimes a little itchy. I have wondered if the size corresponding with the finger tip has any significance as to repeated rubbing being a contributive factor. This roughness develops into a scaliness which at intervals will peel off and leave the skin apparently normal for a short while. The roughness invariably recurs and the scaliness becomes more noticeable. Eventual-

ly this scale will peel off or be picked off, uncovering a red sticky spot which soon dries and becomes again covered by a scale which in course of time becomes more a scab than a scale. This stage of the condition may persist unchanged for months or even years.

At least five per cent, and in some individuals a much larger proportion, go on to epitheliomatous change, as is shown by the raw sticky surface under the scab in time becoming a shallow ulcer with definitely raised margins. The pre-epithelioma has now passed through the stages of pigmentation and of hyperkeratosis and has become definitely a rodent ulcer or basal celled epithelioma, though some claim that senile keratoses which become malignant are invariably prickle cell epitheliomas. The basal cell type may grow slowly and be apparently innocuous or it may suddenly become inflamed around its margin and grow rapidly, with soggy, elevated, vascular, granulomatous tissue encroaching upon its ever widening elevated margin; that is, it may suddenly assume the prickle cell type.

Now what should be done at the outset with these cases that begin apparently so innocuously and can result so disastrously? Patients should be instructed as to the necessity of wearing a broad brimmed hat if much exposed to sunshine. The present fad, fortunately dying out, of going bareheaded is especially harmful to people predisposed to the formation of keratoses. The ears as well as the face of people of thin skin and florid complexion, as the descendants of the Scotch-Irish so numerous among us, are especially susceptible and need the protection of a broad-brimmed hat. The proverbial wide hat of the farmer, and the "ten gallon" covering of the cowboy, the sombrero and the wide straw brim of the swarthy Latin-Americans are thus seen to be rational adaptations to environment. An English author has attributed the increased incidence of skin cancer among the English residents of Australia to their persistence in wearing their bowler (derby) hats while the Colonial wears a covering more suitable to the climate.

Pigmentation stage of this condition and the early stages of roughness can be easi-

ly treated by the method of Dr. Lain of Oklahoma City. This consists in wiping off the affected area with ether to remove all grease from the skin, and then applying a 20% solution of salicylic acid in lysol. This is applied with a small swab of cotton on an applicator, such as a tooth pick, and rubbed in well. This causes a white spot with very little discomfort and results in a brown scale which, upon peeling off, generally leaves the skin smooth.

If the condition has progressed beyond the point where this proves remedial, the next indication is for the use of carbon dioxide snow. The difficulty and inconvenience of the preparation of this makes it prohibitive except to those especially provided with the proper equipment, but it is now possible in some localities to procure dry ice, which is the same thing. It is 110 degrees below zero Fahrenheit or, in plain terms, it is a "snowcicle"—142 degrees colder than an icicle. This cold cautery has all the advantages of a hot iron and none of its disadvantages. There is negligible pain, no scarring and its penetration is self limited; you cannot do too much in the way of destruction. Before using the carbon dioxide snow the patient should be given a salve of salicylic acid—half a drachm, precipitated sulphur—one drachm, and vaseline—one ounce. The face should be washed with warm water and white Castile soap, and the salve applied to the rough spots night and morning for several days preceding the application of the snow. After the use of the carbon dioxide the parts treated should be kept greased with vaseline or cold cream for forty-eight hours; i. e., during the blister stage. This application of grease should then be discontinued and the blister allowed to dry up and become a scab which should be unmolested until it spontaneously drops off. Before the days of electric desiccation or of the present regulation of x-ray dosage, this method, in my hands, resulted in the permanent cure of conditions plainly past the stage of a mere keratosis, though some showed recurrences after a period of several years' quiescence. Patients prone to have keratoses should use the Castile soap and warm water, followed by the above salve, as a prophylactic measure. If use is prolonged, the sulphur should be omitted.

When the condition has advanced to the point where there is a definite elevated border, desiccation should always be done, followed by x-ray exposures. X-ray will do all that can be expected of radium in these superficial epitheliomas, with less cost, less time, and more definite control of dosage. But neither x-ray nor radium can be completely relied on without first absolutely extirpating all abnormal growth with electric desiccation, preferably unipolar unless the size of the growth makes it inadequate. The unipolar current is subject to better control as to depth of destruction and therefore less apt to cause secondary hemorrhage, while the bipolar current, especially the so-called cutting current, is more efficient in eradicating extensive growth. The following technique has proved very satisfactory: Thorough eradication with electric desiccation, and one to three exposures of x-ray, two units unscreened if superficial; and screened with 2 mm. of aluminum if involvement is deep; at intervals of twenty-one days to four weeks, always deferring an exposure until the reaction from a previous one has subsided.

If the condition has persisted so long that there is metastatic involvement of the lymph nodes, actual surgery for their removal is indicated. The association of this condition modifies the prognosis most unfavorably.

The other form of keratoses, known as seborrheic keratoses, is best classified by Dr. MacKee of New York as being of three types, the first of which simulates the senile keratosis we have just considered and should therefore be subject to the same procedure as that above outlined. The other two are respectively of the warty type and the mole type. These, as they rarely become malignant, are subject to the same rule as a wart or mole; viz., if they are exposed to repeated irritation or show signs of inflammation they should be removed. The oft-heard dictum of the general practitioner, "don't bother it if it is not bothering you," may be applicable to some moles, warts, and seborrheic keratoses but is most reprehensible if applied to senile keratoses, where a postponement of simple measures permits the onset of destruction to proceed even sometimes to the point of irreparable disaster.

TUMORS OF THE BREAST*

By
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The mammary gland constitutes a suitable field for clinical and pathologic investigation of the cancer process, not only because of the vast surgical and pathologic material it affords but also because of the opportunity it presents for a study of the physiology of the gland in its relation to tumor pathology.

Max Cutler, who has done much valuable work in a study of breast physiology and disease, especially in connection with tumors, has made a valuable contribution to this subject by his description of mazoplasia. Under the term mazoplasia, Cheatle and Cutler describe a process of desquamative epithelial hyperplasia which they regard as physiologic. Whitehouse, in a recent paper, takes issue with Cutler. He considers the condition pathologic rather than physiologic. The patient, representative of the type, presents herself with mammary pain, with swelling, oligomenorrhea and menstrual headache. He feels that this condition has an endocrine basis and may be relieved by the therapeutic use of an estrus-producing hormone.

The terms chronic mastitis and chronic cystic mastitis, as they are commonly used in the literature, include under their descriptions a variety of conditions: some physiologic and innocent, others distinctly pathologic and of great menace.

Those conditions of the breast which appear pathologic have been isolated and described under the term mazoplasia. Ewing holds that the disease begins as an inflammation and often ends in a neoplasia. Nevertheless, extreme examples of the different forms of the disease are widely separated. Mazoplasia is characterized by a hyperplasia of the pericanalicular and periacinous connective tissue, new formation of ducts and acini and desquamation of epithelial cells in the terminal ducts and their acini. The ducts become distended giving rise to diffuse pain and generalized nodularity (lumpy breast). Careful search by Cutler and others has failed to reveal mi-

croscopic indication of transformation of the epithelial hyperplasia of mazoplasia into epithelial neoplasia (papilloma or carcinoma).

CYSTIC DISEASE OF THE BREAST

The first description of cystic disease of the breast is credited to Sir Astley Cooper and to Velpeau in 1856.

The consequences of cyst formation are:

- (1) Stagnation of contents.
- (2) The supervention of a neoplastic process (papilloma, carcinoma).

On the formation of a cyst there is stagnation of its contents, and it is conceivable that among these contents may be irritants which continue their action undisturbed over long periods. As long as the epithelium remains active it is possible that the continued action of the irritant may be a factor in the development of a neoplastic state.

Ewing divides chronic mastitis into two types:

- (1) Interstitial.
- (2) Glandular.

A third type would include normal involution atrophy.

The increasing attention to the early stages of cancer is bringing under much closer observation a much larger number of cases of chronic mastitis.

CYSTIC MASTITIS

The common form of productive mastitis is marked by the production of many small cysts, by considerable epithelial proliferation and by diffuse growth of firm fibrous tissue. The disease usually develops first in one breast and often later in the other. The onset is slow and usually painless and the condition may not be recognized until the cyst attracts attention. On palpation the whole organ is firm and many hard movable nodules, as large as a pea, may be detected. Many cases are complicated by cystadenoma, fibro-adenoma, and carcinoma.

Cheatle's study of the cancerous breast has furnished substantial confirmation of the importance of precancerous changes in the origin of many mammary carcinomas. It is therefore clear that chronic mastitis

*Part 3 of a symposium on cancer, presented to the Association in annual session, Birmingham, April 18, 1934.

is a very important predisposing condition to mammary cancer.

The solid encapsulated benign tumors of the breast are:

- (1) Fibro-adenoma.
- (2) Intracanalicular myxoma.
- (3) Cystadenoma.
- (4) Cysts with intracystic papillomas.
- (5) Solid dermoids.
- (6) Lipomas.

The non-encapsulated benign tumors, as a rule, represent areas of chronic cystic mastitis from simple adenoma to advanced types of cystic and papillo-adenocystoma. Benign cysts of the breast are more frequently associated with chronic cystic mastitis, which, when cut down upon, have a blue dome and when opened have clear or cloudy contents and a smooth wall.

Two gross forms of fibro-epithelial tumors occur in the breast:

- (1) Massive.
- (2) Papillary or intracystic fibro-adenoma.

(1) In the massive type, the tumor forms a circumscribed mass of considerable dimensions, which is firm and fibrous, or, and more often, soft and vascular. Cysts may be encountered. (2) Papillary intracystic fibro-adenoma is a comparatively common tumor. It occurs usually after the menopause but occasionally in young or very old persons. In this type the tumor is usually rounded and is often accompanied by a bloody or serous discharge from the nipple. Malignant forms of fibro-cystic adenomas are relatively common, but whether they represent malignant transformations or are malignant from the first it is difficult to determine.

CARCINOMA OF THE BREAST

On chiefly anatomic features, the disease may be considered under the following forms:

- (1) Adenocarcinoma—arising chiefly in cysts of ducts or sweat glands.
- (2) Duct carcinoma—arising from the lining cells of ducts.
- (3) Acinar carcinoma—arising from the epithelium of the acini.

Of these main groups there are several subdivisions, as, for example, (a) gelatinous or mucous carcinoma, (b) fibro-carcinoma, and (c) sarcoma.

The condition of the breast at the time of development of the tumor has a prominent influence on the anatomic characters and clinical course.

(1) Adenocarcinoma usually produces bulky tumors. They may appear to be encapsulated. They frequently arise in cysts and the cyst wall may be long retained. Early stages of adenocarcinoma may be recognized by their encapsulation, crumbly papillary structure, and soft consistence. To this group the term medullary carcinoma is often applied. The most malignant forms of adenocarcinoma are very cellular tumors in which only traces of adenomatous structure remain.

(2) Duct Carcinoma: Carcinoma arising from the lining of the ducts produces the majority of mammary cancers. Several forms of duct carcinoma may be recognized:

- (a) Cicatrizing comedo carcinoma.
- (b) Diffuse duct carcinoma.
- (c) Carcinoma associated with chronic productive mastitis.
- (d) Miscellaneous atypical forms.

(a) Cicatrizing comedo carcinoma presents a very characteristic gross appearance. Usually the entire breast is transformed into a dense fibrous tumor mass smaller than the original organ, involving the nipple and often the overlying skin and more or less adherent to the deep fascia over the muscle. On section the mass is marked by prominent yellow streaks or spherical points which are ducts with necrotic detritus and tumor cells. Progressive fibrosis draws the outlying portion of the organ toward the central area, usually beneath the nipple.

(b) Diffuse Duct Carcinoma: The breast may remain large and slightly swollen but no definite tumor mass can be defined, the whole affected area showing ill-defined induration. The nipple, skin, and tumor are restricted in mobility. The skin may be corrugated and present an "orange peel" appearance. On section the ducts appear as coarse yellow streaks about which

there is thickened new connective tissue infiltrated with tumor cells. There is no localized tumor, but only an irregular network of cancerous ducts separated by fat and fibrous tissue. Paget's disease of the nipple is often associated with an unsuspected carcinoma of the ducts.

(c) Carcinoma arising in chronic diffuse productive mastitis: Many mammary cancers arise in breasts which are the seat of chronic mastitis, but the mastitis has not progressed far nor greatly altered the structure of the organ.

(1) The breast may be the seat of a diffuse growth of smooth elastic connective tissue and at one point, usually along the edge, there is a very hard cicatricial nodule invading the new connective tissue and advancing into the fat tissue. The nodule is solid, opaque and marked with chalky streaks.

(2) One or both breasts may be the seat of hard shotty nodules; indurated ducts may be traced from the nipple to the outlying portion of the organ.

In many cases of chronic glandular mastitis (cystic disease, Shimmelbusch's disease) cysts form in the indurated tissue. These cysts are smooth-walled and contain clear fluid or they present papillary adenomas; or a soft cellular adenocarcinoma or alveolar carcinoma invades the thickened cyst wall.

When a woman consults a surgeon for a lump in her breast one question and one only presents itself to the surgeon to answer, namely, "Is the lump cancer or not?" All other questions but this can await an answer. This one cannot, and until it has been answered beyond all question of doubt the first duty of the surgeon to his patient will not have been discharged.

NEXT ANNUAL MEETING

MOBILE

APRIL 16-18, 1935

INFECTION VERSUS CANCER OF THE FEMALE GENITALIA*

By

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In differentiating these two maladies of the female organs, nothing plays a greater role than the patient's marital status—all facts pertaining thereto and to her story; the entire time allotted to this paper could be spent profitably in discussing their importance. Suffice it to say, they should be kept before you in the study of each patient who comes under the subject now being discussed.

Differentiation of infection and cancer of Bartholin's glands ordinarily can be made without difficulty. In the former, the history of the case and the presence of a fluctuating painful tumor (and, perhaps, of gonococci) are significant. In contrast, there is, in cancer, a hard, indurated, non-painful, slowly growing subdermal tumor with tendency to become fixed.

The clitoris is rarely involved in an inflammatory process. Occasionally it may be found to be involved in the primary lesion of syphilis. The existence of an indurated mass, possibly ulcerated, and the demonstration of spirochetes by dark field illumination would be indicative of syphilis. In cancer the tumor is hard, non-painful and subdermal.

In vulvitis with ulceration, the patient and her history play a most important part in the diagnosis. Most confusing would be a secondary infection of syphilis, with the presence of the primary lesion. Demonstration of the spirochete is of great aid inasmuch as the Wassermann, in such instance, would probably be negative. In cancer the mass would be more localized, not painful, slow but steady in growth, but without the accompanying swelling found in an inflammatory process. Finally, a biopsy will give a correct diagnosis.

Acute vaginitis should be easily recognized at examination; especially so since cancer of the vagina is practically always secondary to involvement of neighboring structures.

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Cervicitis, endocervicitis, erosion of the cervix, syphilis of the cervix and cervical structure, and early cancer of the cervix will often tax one's acumen in reaching a correct diagnosis. Late cancer, of course, is readily recognized.

In cervicitis, one finds an enlarged cervix, with profuse leukorrhea resulting from infection of the cervical glands; in early cancer the cervix may or may not be enlarged, but there is a blanched area that bleeds easily. If these evidences of early cancer are present, the diagnosis can be made by biopsy. Endocervicitis, with a protrusion of the mucous membrane, likewise should offer little difficulty in diagnosis; in doubtful cases biopsy will clear the matter up.

In a study of diseases of the cervix, the old teaching, that hemorrhage is more likely in cancerous than in inflammatory conditions, still holds good. Furthermore, leukorrheas are more often due to infection of the cervical glands than to trouble in the vagina. It should be remembered, also, that spotting, or slight hemorrhage between the menstrual periods, is indicative of cancer.

Due to its marked redness, erosion of the cervix should be easily recognized. However, if a primary lesion of syphilis is present in the eroded area only the presence of spirochetes, or a biopsy, will make a diagnosis possible. If it is not possible to have a biopsy or a dark field examination, one treatment of arsphenamine will be of aid in determining if the lesion is syphilitic. In cervices which do not respond to treatment, repeated examinations should be made since it has been shown that cancer of the cervix may be slow in developing to a degree where it can be recognized at the usual examination. Stricture of the cervix may be precancerous; if it does not respond to treatment, tissue about the stricture should be removed for microscopic examination.

Endometritis not associated with acute inflammatory conditions, as in infections after abortions and in gonorrhea, rarely exists. I repeat, that leukorrheas are rarely associated with endometritis. Therefore, a patient in the child-bearing age, who has a profuse, watery discharge, perhaps blood-stained, a profuse menstruation and spotting between periods, demands special at-

tention, chief among which is a microscopic examination of tissue removed by curettage. Most likely beginning cancer of the body of the uterus will be found.

Ordinarily, salpingitis with pus offers little difficulty in making a diagnosis, but a staphylococcic infection may produce a fixation with induration that can be diagnosed only by exploratory operation. The same is true with infection and malignancies of the ovaries.

In conclusion, it behooves us to be more careful in our examination of female patients, remembering that at any time we may be dealing with a malignancy, the recognition of which, in many instances, means much to the patient, and a satisfaction to the doctor of a job well done.

To me this paper is quite inadequate, but I am sure our President, in arranging this symposium, knew perfectly well that I could offer nothing of real value. I have presented the subject to you for discussion, hoping that a new interest might be created. With renewed interest should come more careful study, more thorough examination, earlier diagnosis, more effective treatment, and, finally, the transfer of cancer from the category of an incurable, in the minds of many, to that of a curable disease.

Trichomonas Vaginitis—On examination of the vulva, there may be seen, in many cases, cheesy-like flakes, and on examining deeper into the vagina, the walls of the vagina may be seen covered here and there with these cheesy flakes. The vagina usually appears drier and bluer than normal. Sometimes there are small erosions under these flakes; some cases give the appearance of an acute tonsillitis; some are similar to "thrush" of the mouth. The vagina most characteristic of the disease that I have observed, gives the appearance that one would expect if a greenish tint powder had been blown into it, and the powder had collected here and there on the vaginal walls.

Local application of 1 per cent aqueous solution of gentian violet, once a day, for three applications, and then every other day for three applications is recommended. The patient is instructed to take a soda douche twice a day. This method of procedure usually clears up the infection.—*Karnaky, Texas State J. Med., Sept. '34.*

SPINAL ANESTHESIA*

By
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Probably no procedure in medicine has undergone a more complete change of thought than spinal anesthesia. Only a few years ago the procedure was looked upon with suspicion, was considered most dangerous and attempted only by the eccentric or dramatic surgeons and on patients who had definite contraindications to other anesthetics.

I am not an enthusiast for there are a number of definite limitations; definite contraindications, as well as indications for and contraindications to other anesthetics.

The introduction of chemically pure crystals of novocaine has been the greatest factor in making spinal anesthesia safe; a second factor has been the improved technique worked out by Labat, Koster, and others. The chemical meningitis present in most cases in the past is now extremely rare, though the special sensitivity of the subarachnoid space to certain substances injected must always be kept in mind. However, in the past five years, in approximately fourteen hundred cases, we have not had a single case of oculomotor or lower extremity paralysis. Headache has occurred only occasionally; in three or four cases it was severe enough to require treatment. In all cases in which it occurred there was a breach in routine. The head was raised before twenty-four hours. They were usually immediately relieved by lowering the head again but if not a second spinal tap was done.

There is only one serious objection to the routine use of spinal anesthesia for all major operations below the diaphragm, namely, circulatory depression. The factors concerned in circulatory depression are many more than the traditional vasodilatation resulting from splanchnic nerve paralysis. Cellular oxygen want, the loss of skeletal muscle tone and contractility of more than one-half the body, the acid base balance or increase in hydrogen ion concentration of the blood, lowered vascular muscle tone, low alveolar oxygen tension, carbon dioxide retention and intercostal nerve

paralysis all are definite factors and act in a sort of vicious cycle tending to make circulatory depression progressive.

However, the danger from this depression with subsequent fall in pressure is not borne out clinically. The fall in pressure usually does not exceed 30 mm. of mercury, if the dose of novocaine is 150 mgs. (2¼ grs.) or less, given in 5 cc. or less of spinal fluid, and the patient put in the Trendelenburg position immediately. Fortunately the patient with hypotension does not experience as much fall in blood pressure as does the patient with normal or hypertension. Why this happens no one knows, but the most reasonable assumption is that the hypotension individual has a definitely unstable vasomotor system and the constant vasodilatation accounts for the low pressure normally; hence this factor is eliminated during anesthesia. The patient with normal or mild hypertension will stand a fall in pressure of 50 mm. or more of mercury with no inconvenience but the short obese individual with marked abdominal distention and a low blood pressure cannot tolerate a Trendelenburg position and will be most upset by spinal anesthesia. However, this individual is a poor risk for any anesthetic. Gastric lavage repeatedly and large quantities of glucose or acacia intravenously will improve his tolerance to spinal anesthesia.

We have had only two deaths in which the anesthetic could have been a factor. Both were moribund patients with intestinal obstruction, entering the hospital forty-eight and seventy-two hours, respectively, after onset; both had been vomiting fecal material for twenty-four hours. These cases were in the beginning of the series and neither had gastric lavage before going to the operating room.

All cases of intestinal obstruction and cases with abdominal distention and nausea should have a prolonged gastric lavage and large quantities of glucose and saline intravenously immediately before the operation. Our technique has been practically the same for the past three years. One or two capsules of orlital are given one hour and morphine and atropine thirty minutes before operation. Puncture is done with the patient on his side, in the third or fourth interspace (never above the second

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or third), using a twenty-two gauge Vim needle. The spinal fluid is allowed to drop into an ampoule containing neocaine crystals, two to five cc. of fluid used depending on the anesthetic level desired. Quantity of drug used varies from fifty to one hundred and fifty mgs. Injection is slow and the patient is immediately put in the Trendelenburg position. Anesthesia lasts from fifty minutes to one hour. Supplementary anesthetics should not be used. If the operation cannot be completed within the above time limit, some other anesthetic should be selected.

Undoubtedly, many deaths attributed to other causes have occurred from the use of anesthetics, but it is equally true that many deaths have been falsely attributed to spinal anesthesia. Surgeons have been too greatly influenced by strongly opinionated authors, who, obviously prejudiced, have written articles supporting or condemning the use of spinal anesthesia. A host of papers have appeared citing many and fortunate experiences with no deaths "attributed to the anesthetic"—a phrase leaving a justifiable doubt in the mind of the reader. Tendler, McCormack and Labat have all published such papers. By this we are led to believe there were no deaths which the authors were willing to attribute to this method. Consequently, the personal equation renders such data of questionable worth.

On the contrary, innumerable papers have appeared unalterably opposed to spinal anesthesia; many of the authors are surgeons who summarily condemn the procedure, have never used it and whose knowledge, therefore, is entirely second hand and as valueless as that in the preceding paragraph.

We are passing through a period of widespread lack of understanding of spinal anesthesia, due largely to the lack of a standardized method and a perfected technique. Constantly we are approached with questions: What is the best drug to use? What position is best? Should it be injected with much, little or no barbotage? Ready made or extemporized with the patient's own spinal fluid? Should ephedrine and adrenalin be used? What dose should be used? By weight or the size of the canal?

Briefly we would answer these questions by saying that procaine hydrochloride is the best drug to use (personally I prefer the French product neocaine). It should be dissolved in an ampoule in the patient's own spinal fluid and injected slowly with some barbotage, depending upon the extensiveness of the anesthesia desired. The patient should be lying on his side and the Trendelenburg position assumed immediately after the injection. Ephedrine, adrenalin and caffeine have no value. The dose should be 50 to 150 mgs. The level of anesthesia depends on the amount of fluid withdrawn. Operations should be confined to structures below the diaphragm.

There can be no doubt that spinal anesthesia has reduced the mortality rate in acute abdominal emergencies: appendicitis; perforated gastric and duodenal ulcers; strangulated hernias, and intestinal obstruction. It facilitates the work of the surgeon by relaxing the abdominal muscles and contracting the loops of distended intestine.

Pulmonary complications are certainly no more frequent than with other anesthetics. The patient is much more comfortable. Postoperative nausea and vomiting are reduced materially and gas pains are reduced to the point that enemas are no longer necessary. Nothing in our experience has suggested that postoperative complications of any importance, either early or remote, are any more frequent following spinal anesthesia than any other form of anesthesia. No anesthetic is without certain inherent dangers and even though spinal anesthesia is relatively new, one should not be too appalled when an unexpected or untoward result occurs following its use or be too unreasonable in its condemnation, at least until a careful review is made of the process of inhalation anesthesia.

Dr. Crile, in discussing "Anesthetics, Narcotics and the Sick Man," American Journal of Surgery, gave a very vivid picture of what happens during inhalation anesthesia. "Inhalation anesthesia, therefore, is a state which is analogous to death and is removed from death only in inverse ratio to the depth of anesthesia, that is, the deeper the anesthesia the more closely is the state of the organism allied to death. And just as all the tissues are involved in

death so are all involved in the state of anesthesia. Of course, the brain, which is the most active tissue in the body, is affected more profoundly and it is that profound effect which has unfortunately led us to overlook the effect upon other organs and tissues."

If the anesthetic affects every organ of the body, what happens to the patient with a degenerated or senile brain, a diseased liver, a decompensated heart or a depressed kidney function when an anesthetic is given? Suppose the patient is an old man with an hypertrophied prostate, in whom, because of back pressure the potentials of the kidney are lowered and the vital short wave radiations are depressed. What happens when he takes ether? If enough is given to anesthetize the brain, the kidney potentials will be reduced from the low level to zero and when the operation is over the kidney is dead. It will be said that the patient died of anuria—the end result of the patient's disease—but the patient really died from the anesthetic. In effect he was dead before the operation was finished.

Spinal anesthesia, therefore, even though it has the same anesthetic mortality, should not be used in trivial or minor operations, in cases of extreme blood pressure or in operations which have no shock mortality. On the other hand, in all major, shock producing operations below the diaphragm, where shock *per se* is the paramount risk, use spinal anesthesia.

Cancer of the Larynx—The treatment of cancer of the larynx is essentially that of treatment of cancer in any other part of the body, that is, early diagnosis and complete removal. Even when the diagnosis is not made early, it is the surgeon's responsibility, if extirpation offers a reasonable hope of cure, to remove the neoplasm *in toto*. Obviously the presence of distant metastasis is an absolute contraindication and the presence of extension beyond the walls of the larynx or of metastasis to the neighboring nodes is a very grave omen, but apparent cures even in a few cases falling in the latter category have been reported by several authors.

It was Lynch's practice to remove early cancers through the mouth by sharp dissection or diathermy if movement of the cords was not impaired.
—*Equen, South. M. J., Sept. '34.*

UNDULANT FEVER*

By
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and
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Undulant fever, since Keefer¹ in 1924 recognized a case, which had had no contact with goats, has received more and more attention in the United States. According to Hasseltine² (1931), prior to 1925 only 128 cases of this disease had been reported, but the annual reports of the Surgeon General of the U. S. Public Health Service give 114 for 1927, 666 for 1928, 975 for 1929, 1,450 for 1930, 1,578 for 1931, and 1,502 for 1932. This does not necessarily indicate that undulant fever is increasing in this country but rather that more cases are being diagnosed because its importance, as an entity, has been perceived. In this way a portion of those cases which were formerly classed as "undiagnosable fevers" has been found to be undulant fever.

Although there has been a great deal of confusion in bacteriologic nomenclature during the past few years, the generic term *Brucella* has been applied by almost common consent to a family of closely allied organisms which produce a group of similar diseases called Brucellosis. Under this heading we have Malta fever which was originally described by Bruce³ (1887) and shown to be caused by *Br. melitensis*, an organism present in the blood, milk, urine, feces and uterine discharges of infected goats. Under undulant fever are placed those infections which are caused by the bovine or porcine strains of *Br. abortus*. The bovine type of *Br. abortus* was first identified by Bang⁴ (1897) in Denmark who proved that it was the causative factor of infectious abortion of cattle. Soon

*Read before the Association in annual session, Birmingham, April 18, 1934.

1. Keefer, C. S.: Report of a case of Malta fever originating in Baltimore, Bull. Johns Hopkins Hosp. 35: 6-14 (Jan.) 1924.

2. Hasseltine, H. E.: A study of the epidemiology of undulant fever, Am. J. Pub. Health, 21: 519-525 (May) 1931.

3. Bruce, David: Notes on the discovery of a micrococcus in Malta fever, Practitioner 39: 161-170, 1887.

4. Bang, B.: Die aetiologie des seuchenhaften (infektiosen) Verderbens, Ztschr. f. Tiermed., 1: 241, 1897.

after, it was shown that swine suffered from a similar infection caused by a bacterium which resembled *Br. abortus*. Evans⁵ (1918) demonstrated that there was a very close relationship between *Br. melitensis*, and *Br. abortus* from both bovine and porcine sources, but the real importance of this discovery was not realized until the wide spread incidence of undulant fever in the United States became apparent.

With the recognition of more and more cases of undulant fever in this country, the possible sources and avenues of infection began to receive attention. It is with this end in view that so much laboratory work has been done in an effort to identify the different types or varieties of the *Brucella* group. Smith⁶ (1926) noticed that porcine strains, as a rule, tolerated less CO₂ than the bovine, and McAlpine and Slanetz⁷ (1928) showed that the three varieties could be divided into two broad groups: one which required additional CO₂ for initial growth—*Br. abortus* bovine; the other which could proliferate without added CO₂—the porcine strain of *Br. abortus* and *Br. melitensis*. Huddleston, Halsey and Torrey⁸ (1927) showed that it is possible to separate the *melitensis* from the *abortus* strains by hydrogen sulphide formation. McAlpine and Slanetz⁹ (1928) claimed that both the porcine variety of *Br. abortus* and *Br. melitensis* will utilize a small amount of dextrose when added to the culture medium, while *Br. abortus* bovine will not. Evans¹⁰ (1925) placed chief reliance on the

agglutinin absorption methods. Later Huddleston¹¹ (1929) developed a dye plate method which appears to be the best suited for routine work, giving results which are quite dependable.

Wilson¹² (1933) has recently completed an exhaustive investigation of the various methods by which this group may be subdivided. He concludes that the members of the genus *Brucella* are relatively labile, responding readily to environmental changes. For that reason he believes no one method should be used, but each strain should be examined for carbon dioxide sensitivity, for hydrogen sulphide formation, and for growth in the presence of the dyes recommended by Huddleston. He states that, by doing this, wrong classification and erroneous conclusions will be avoided. Also, after long continued cultivation all strains lose some of their characteristics, making them doubly difficult to classify. Microbic dissociation is an important factor, and unless it receives consideration wrong deductions will be made. It is probable that many so-called para-strains are rough dissociates.

The fact that a strain isolated from a human case may be classified as bovine or porcine *Br. abortus* or as *Br. melitensis* does not necessarily mean that the infection was derived directly from the cow, the hog or the goat. The bovine type, being the less virulent, is most often confined to cows, although it has been demonstrated rather infrequently in horses. The porcine type, while apparently indigenous to hogs, has been found frequently in cattle. It has been shown that cattle may be infected artificially very easily with *Br. melitensis*, and it is probable that close association with infected goats might cause a spontaneous spread in cows. This is especially important when we consider the large goat raising section in the Southwest, which is known to harbor a number of goats infected with *Br. melitensis*.

The difficulty which exists in determining the true origin of the three varieties of the *Brucella* group has presented many

5. Evans, A. C.: Further studies on *Bacterium abortus* and related bacteria. II. A comparison of *Bacterium abortus* with *Bact. bronchisepticum* and with the organism which causes Malta fever, *J. Infect. Dis.* 22: 580-593 (June) 1918.

6. Smith, T.: Variations in CO₂ requirements among bovine strains of *Bacillus abortus*: *J. Exp. Med.* 43: 317-325, 1926.

7. McAlpine, J. G. and Slanetz, C. A.: Studies on the metabolism of *abortus-melitensis* group. 4. Effect of various concentrations of carbon dioxide. *J. Infect. Dis.* 43: 232-240 (Sept.) 1928.

8. Huddleston, I. F., Halsey, D. E. and Torrey, J. P.: Further studies on the isolation and cultivation of *Bacterium abortus* (Bang), *J. Infect. Dis.* 40: 352, 1927.

9. McAlpine, J. G. and Slanetz, C. A.: Studies on the metabolism of *abortus-melitensis* group. 2. Glucose utilization. *J. Infect. Dis.* 42: 73, 1928.

10. Evans, A. C.: Studies on *Brucella (alkaligenes) melitensis*, U. S. Public Health Service, Hyg. Lab. Bull. 143, 1925.

11. Huddleston, I. F.: The differentiation of the species of the genus *brucella*, undulant fever symposium, Proc. A. P. H. A. 1929, p. 18.

12. Wilson, G. S.: Classification of *brucella* group, *Jour. Hyg.* 33: 516-541, 1933.

problems from the epidemiologic standpoint. As to the amount of infectious abortion in cattle herds, it is considerable, and spread, the length and breadth of the country. However, in various sections it differs in intensity, but no complete survey has been made to ascertain its actual incidence. Although among beef cattle the infection is probably of minor importance, in dairy herds, especially in the older settled sections of the country, the reverse is true. Intensive testing in Connecticut has shown that 90 per cent of the herds are infected, and in these infected herds approximately 30 per cent of the individual cattle harbor *Br. abortus*. Recent studies by Starr¹³ (1934) have shown that infectious abortion is common in Virginia, and the close relationship of undulant fever with *Brucella* infection in cattle is apparent. The available data concerning the incidence in swine are meager, but seem to prove that it is much less than in cattle. Some observers give estimates varying from 1 to 4 per cent, and this is probably fortunate, because strains emanating from these animals seem to be much more virulent for man. A suggestion made by Grayson and Hastings¹⁴ (1933) seems to be especially pertinent. They state: "Even though at present apparently infrequent in swine, it may be remotely possible that the disease is only beginning to adapt itself to these animals." If this assumption be true, both an increase in incidence and severity may be expected.

If, therefore, the infection in cattle is widespread, why, when so much raw milk and raw milk products are consumed, and so much contact with infected animals exists, is the number of cases of undulant fever still comparatively small? Aside from the fact that many cases are missed because of incorrect diagnosis, there are several other factors which should be considered. These have been summed up by Starr¹³ (1934) as follows: "1. Most of the strains of the abortus variety originating from cattle are comparatively non-pathogenic. 2.

Clinical disease results only following contact with, or ingestion of, enormous doses of the abortus variety, except in the case of especially virulent strains. 3. Most people probably have some immunity, either natural or acquired. 4. Under given conditions active infection is less likely to result following ingestion of the organisms than following contact through the eye or the abraded skin."

There appear to be two main avenues of infection in this disease. First, it may enter through the gastro-intestinal tract by ingestion of milk and milk products which contain *Br. abortus*. Secondly, it may enter through the broken skin or through the conjunctiva of the eye following contact with infected animals or their contaminated secretions. As Starr¹³ (1934) has pointed out, "the source or sources of infection and modes of transmission of undulant fever in the human family will vary in different geographic areas according to the prevailing local conditions of animal and dairy husbandry and the consumption of raw dairy products." Thus, in some sections where the cattle infection is high, raw milk and its products may be the main method of spread; in others, contact with swine may be the cause, and in others like Iowa, as Hardy, Jordan and Borts¹⁵ (1932) have shown, cattle are responsible for half of the cases and swine the other half. They add, also, that patients suffering from *Br. abortus* infection contracted from swine have a much more severe reaction than those infected by cattle.

From the standpoint of preventive measures pasteurization of all milk is perhaps the most effective and the easiest to perform routinely, for the protection of urban populations. Numerous experiments have demonstrated that all members of the *Br. abortus* family will be killed at pasteurizing temperatures. In rural districts the problem is much more complicated. Here, commercial pasteurization is impracticable because of the small quantities of market milk involved, but the boiling of whole milk and the use of cooked milk products is indicated as a protective measure. Also, there is more direct contact with infected

13. Starr, L. E.: Undulant fever, its relation to brucellosis in domestic animals. J. A. M. A. 102: 902-905 (March 24) 1932.

14. Grayson, W. B., and Hastings, G.: Brucellosis: General consideration. Paper presented at annual meeting of Southern Medical Association, Richmond, Va., Nov. 1933.

15. Hardy, A. V., Jordan, C. F. and Borts, I. H.: A further study of brucella infection in Iowa. Pub. Health Reports 47: 107-193 (Jan. 22) 1932.

animals. Farmers and animal husbandrymen should be made to realize the danger of undulant fever if proper precautions are not taken in handling infected animals. Of course, the ultimate solution of the problem here lies in the complete eradication of infectious abortion from the cattle and swine herds in the United States. The freeing of these herds by eradication and segregation on the results of the blood test is a slow process, but such a program might possibly be combined with the tuberculin testing campaign, at least, in some sections of the country. Successful eradication can only be accomplished by intensive and frequent testing and scrupulous attention to all details. In Washington County, Maryland, Cameron¹⁶ (1933) has attempted to control Bang's disease by testing the milk of all cows by means of the rapid macroscopic agglutination test. This has been done because the labor and expense involved in the collection of milk samples is much less than in taking specimens of blood. His results have been most gratifying. Since not all infected animals show agglutinins in their milk, such a method should be regarded as a temporary expedient to be used in rural sections where pasteurization is impossible and funds are not available for blood testing.

In conclusion, a word concerning laboratory diagnosis of undulant fever is important. The agglutination test, applied to the blood of the suspected patient, is the method most often employed because the isolation of *Br. abortus* is most uncertain and requires considerable time. Gibbes¹⁷ (1931) has presented data which question the reliability of the agglutination test for undulant fever, as performed in our public health laboratories, and believes that, as yet, it is not standardized either "in its performance or interpretation." It is probable that the selection of the strain or strains which are employed in the test has a great influence both on the final results and the titer attained. Goode, Dimock and

Harmes¹⁸ (1928) have emphasized the necessity of using polyvalent antigens in the diagnosis of infectious abortion of cattle and such a procedure might be beneficial in the diagnosis of undulant fever. The question of the proper titer to be obtained before a positive diagnosis can be made is a perplexing one. Some workers think that any case having a titer of 1:80 or above should be considered positive, while others claim that titers of less than 1:500 have little or no significance. On the other hand, by cultural methods it has been shown that certain patients may have the disease and yet never exhibit a titer of over 1:15 or 1:30. With such a wide disparity of opinion the safe rule is to consider all positive agglutination tests, regardless of titer, as suspicious if symptoms are present. High titers as a rule are diagnostic.

Giordano¹⁹ (1929) has reported excellent results with an intradermal test, and his findings have been corroborated by others. Here, the interpretation in many cases is difficult. Huddleston, Johnson and Harman²⁰ (1933) have recently described a modification of the old opsonic index test which they use in conjunction with the allergic reaction. As yet sufficient data are not available to properly appraise its value. Hence, for the time being at least, the agglutination test appears to be most practicable from the standpoint of the attending physician. It needs care in its interpretation and should receive more study in our public health laboratories.

18. Goode, E. S., Dimock, W. W. and Harmes, A. H.: Comparative agglutinating properties of different strains of *Bact. abortus* (Bang), J. Am. Vet. M. A. 73: 223-231 (June) 1923.

19. Giordano, A. S.: Undulant fever: Recent studies, J. Indiana M. A. 22: 135-141 (April) 1929.

20. Huddleston, I. F., Johnson, H. W. and Harman, E. E.: A study of the opsonocytaphagic power of the blood and allergic skin reaction in brucella infection and immunity in man. Am. J. Pub. Health, 23: 917-929 (Sept.) 1933.

16. Cameron, W. R.: Undulant fever control in Washington County, Maryland. Paper presented at annual meeting of Southern Medical Association, Richmond, Va., Nov. 1933.

17. Gibbes, J. H.: Results of agglutination tests for undulant fever. South. M. J. 24: 126-128 (Feb.) 1931.

Art and Science of Medicine—The salvation of medicine has ever proved to be from within itself, and this should guide us now. Preserve our honorable traditions, adhere to the principles taught you, maintain your freedom of thought and freedom of medical practice, cultivate intelligent observation, always giving of yourselves the best you have for your patients, and your future and the future of our revered and age old profession are assured.—Upham, *Texas State J. Med.*, Sept. '34.

THE JOURNAL

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FEE-SPLITTING

One of the ugly by-products of the depression has been an increase in the purchase of patients by unscrupulous surgeons from equally culpable general practitioners on the plea that the latter need the money. Twenty-five years ago fee-splitting spread like a plague over the United States, particularly in the large cities; but the American College of Surgeons, the American Medical Association, the Southern Medical Association, and the State and County Medical Societies, through pitiless publicity in their medical journals—the Southern Medical Journal had nine editorials on the subject in 1912 and 1913—and by the adoption of ordinances that made fee-splitting unethical, forced doctors to realize that it was an actual crime for them to secretly divide fees with each other in their joint relations to the patient.

Credit should be given to the American College of Surgeons more than to any other medical organization for making fee-splitting unpopular. It required its Fellows to sign a pledge that they would not divide their fees with other physicians. The College of Surgeons also required the staffs of hospitals, before the hospital could be classified as "acceptable," to sign pledges not to divide fees. Recently, the American College of Surgeons has sent out a commun-

ication to hospitals requesting them to have the members of their staffs, who have not already done so, to sign pledges not to divide fees.

The Journal of the American Medical Association in an editorial on "Fee-Splitting, An Old Ethical Problem"* speaks plainly when it says: "The essential dishonesty (of fee-splitting) cannot be evaded. The nature of the times is such that men driven by economic necessity seek to find plausible apology for evasion of ideals and principles. It is reasonable to believe that the tottering of a few during this time of stress will not become the example that will lead the rest of the profession to follow the black sheep over the precipice."

Fee-splitting has never been as rampant in Alabama as in some of the more urban states, particularly those of the Middle West; but the practice was sufficiently common and so odious to ethical physicians and surgeons that in 1915 a law, based upon the Wisconsin fee-splitting enactment, was passed by the Alabama legislature making it a criminal offense for physicians to divide fees with each other without the patient's knowledge or consent. Since there are rumors, based upon statements by reliable physicians in various parts of Alabama, that the odious practice of the secret division of fees is increasing in Alabama, the State Medical Association at its last meeting, Birmingham, April 19, 1934, unanimously adopted a resolution, after being endorsed by the State Board of Censors, instructing the Secretary to mail a copy of the state law against fee-splitting to each physician residing in Alabama.

There is reason to believe that the crime of secret division of fees prevails more among physicians who are not members of medical societies than among those who feel it a duty to belong to organized medicine. But without regard to who or what a physician is, if evidence can be secured that he is guilty of fee-splitting, it should be submitted to the County Solicitor for report to the Grand Jury. A few examples of doctors, who prefer dollars to decency, being sent to jail for fee-splitting, should exert a wholesome effect on the practice of buying and selling patients in Alabama.

S. H.

*Editorial, J. A. M. A. p. 1710, Dec. 5, 1931.

A FORWARD STEP

Mr. Harry L. Hopkins, Federal Administrator of Relief, in a recent public discussion of the health problems of the Recovery Program, delivered himself as follows anent the medical side of this gigantic Federal octopus:

"In dealing with these families of ours, we have had some experience with the kind of medical care that has been given, or rather, the lack of it. We found that through 1930, '31, '32, and '33 medical care was given free in the first place by the doctors. The doctors held the bag, there is no question about it, from one end of the country to the other. The medical profession gave free medical care to the unemployed. A lot of our unemployed got no medical care, to be sure. But when the record of this depression is written it will show that if there ever was one man that gave things without any return in this unemployment crisis it was the doctor, from one end of the country to the other. There must have been hundreds of thousands of dollars wiped off the books by physicians in cities and counties and little towns. It is a grand story, the work the physicians did for the unemployed. Now we are beginning to pay a little for medical care. We don't pay much—it amounts to probably a million to two million dollars a month. We now pay the physicians for taking care of people who are sick in our relief families".

At the outset of the Federal relief activities, but small concern was given to the medical aspects of the problem, major effort being focused on the more tangible things of food, clothing and shelter. Heretofore, the medical problems of indigency had been shouldered largely by the individual members of the profession, with such aid as might be mustered through municipal and voluntary agencies. In normal times, and before the economic upheaval, such a system, although vulnerable at many points, seemed to be functioning at least to a degree which warded off complete collapse. The average physician could still, and did, carry his load of charity because, by so doing, his own economic security had not become seriously threatened. The almost over-night tipping of the economic scales, by the sudden transfer from employed to unemployed, has, with many physicians, wrought havoc with individual professional stability to such a point as to create much anxiety and deep concern on the part of the entire medical profession. This—professional insecurity, uncertainty, and

instability—constitutes the crux of the present dilemma facing the profession. Scientific medicine, more widely distributed and sanely and professionally administered, is a necessary and essential prop in the building of our modern social order, if it is to be lasting. The interests of so important a segment of society as the medical profession cannot be ignored in any broad program of medical relief, nor can the profession's counsels and traditions be summarily brushed aside. Modern society has need for some of the refining and altruistic things for which medicine has always stood.

As will be seen from the article appearing in this issue of the Journal, emanating from the Committee on Legislation and Medical Economics, this Committee has been assiduously at work on this problem. The State Administrator of Relief, appreciating the need for medical advice for himself and his field workers and upon the recommendation and approval both of this Committee and of the State Board of Censors, has added to his staff Dr. B. F. Austin, who will serve as medical liaison officer between the medical profession and the field relief workers. Dr. Austin's thorough familiarity with the entire medical profession of the State, coupled with his known professional and ethical attainments, should prove of great value in this rather difficult position both to the profession and to the Relief Administrator. It is hoped that, through this means, many of the inequalities and misunderstandings which have arisen and which, in the future, are likely to arise, may be more expeditiously adjusted. Dr. Austin, if he is to succeed in this undertaking, will need the unstinted backing of the entire profession and it is the hope of both the Committee on Legislation and Medical Economics and of the State Board of Censors, who have been instrumental in making this plan possible, that the unsatisfactory conditions now prevailing throughout the State may, in very large measure, be cleared away. Thus far in no state has an acceptable and smoothly working plan been evolved. Let the members of our profession now view this new problem of medical relief in the light of a challenge to our unique organization and go earnestly to work seeking the answer.

J. N. B.

GLUCOSE THERAPY IN HEART DISEASE

During the last eight years glucose has been employed, both intravenously and by mouth, in the treatment of heart disease. There is experimental evidence that the feeding of glucose results in an increase of glycogen in the cardiac muscle. Clinically it has been claimed, especially by Osato¹, that the administration of glucose, with insulin, in advanced heart failure brings on relief of dyspnea and allows the patient to relax and sleep, that it causes a pronounced diuresis, lessens pain, and has an "enormous therapeutic power."

Recently Smith and Luten² have made an extensive review of the literature on this subject and, in addition, have reported a series of sixteen cases of their own. Unfortunately their efforts in glucose therapy met with very indifferent success and their reports are much less encouraging than are those of some of the earlier investigators. And this is to be regretted because glucose could readily be given to patients who cannot be removed to hospitals and great medical centers.

Smith and Luten think that some benefit might be obtained by forcing carbohydrate feeding over a considerable time in order to build up the glycogen reserves, but "it would appear doubtful whether daily feeding of concentrated syrups could be borne for every long, especially by patients with impairment of digestive function." And they state that the addition of insulin seems of doubtful value in the non-diabetic.

Glucose was given intravenously in 5, 10, 25, and 50 per cent solutions. The 50 per cent solution had a tendency to cause heavy sweating and thrombosis of the veins and was discarded. The 25 per cent solution did not do this and was used in the majority of cases. "In our series it was noted that successive doses of glucose tended to have less effect, and after the effect of glucose had worn off the patients seemed to be worse off rather than better Thus glucose may perhaps be classed with cardiac stimulants which increase the ac-

tion temporarily and may seem to exhaust the heart in so doing. Like such drugs glucose may be most suitable to use in emergencies in which myocardial damage is slight or absent, in order to tide over a critical period, giving time for the organism to readjust itself, recuperate, or take benefit from other measures." In nine of the sixteen cases dyspnea was relieved to some extent, but the effect was of short duration (from three to twelve hours). Glucose failed to restore compensation in any case, while digitalis was successful in three cases. The first injection of glucose was more beneficial than those that followed.

If the St. Louis clinicians are correct, we are confronted with yet another instance in which time and additional experience have sharply lessened the extravagant claims made for a new procedure. Meanwhile, until further evidence pro and con is brought forth, it is well to bear in mind the concluding words of Smith and Luten that "according to the results of this study glucose therapy appears to be indicated as an emergency measure in cases of acute or urgent heart failure and in cases of advanced chronic heart failure in which digitalis in adequate amounts has not restored compensation".

W. W. W.

ATABRINE IN THE CURE AND CONTROL OF MALARIA

Atabrine is a synthetic antimalarial agent. It is an amino-acridine derivative with alkyl groups, and occurs in the form of a yellowish, water soluble powder of bitter taste.

Atabrine, as a parasiticide, was first tested in artificially produced bird malaria by Prof. Kikuth. It was found to be four times more active than quinine. When administered at the height of the avian infection, atabrine reduced the number of parasites in the peripheral blood, but did not cause their complete disappearance.

The original and preliminary tests to determine the curative effect of atabrine were made on patients with paresis. These patients had been infected with malaria by direct inoculation into the blood. The infection was definitely controlled by 0.9 grams (13½ grs.) of atabrine when given in 0.1 gram doses three times a day.

1. Osato, S.: Effect of insulin-glucose on diseased conditions other than diabetes, *Ztschr. f. d. ges. exper. Med.* 51: 488, 1926.

2. Smith, A. E., and Luten, Drew: Study of glucose therapy in heart failure in advanced cardiac disease, *Am. Heart J.* 9: 437 (April) 1934.

Subsequently the Medical Department of the United Fruit Company¹ reported favourable results with atabrine treatment in over three hundred cases of malaria. Preliminary tests in 1932 carried on by the United States Public Health Service gave "such good and startling results" that further extensive tests are in progress.² A. L. Hoops³ has used atabrine in Malacca in estate practise. He states that following the introduction of atabrine the malaria death rate declined more than fifty per cent, with a similar reduction in the relapse rate, which declined from over fifty per cent in quinine-treated cases to less than five per cent in atabrine cases. He is extremely enthusiastic in its praise and has said, "the production of atabrine, a drug far more effective than quinine in that it apparently eradicates the malaria parasite in man as a rule after only five days' treatment, is an event in the history of tropical medicine".

The effect of atabrine therapy is to destroy the schizonts (asexual types) and gametocytes (sexual types) in both tertian and quartan malaria. The schizonts in both forms disappear within an average of three days, the gametocytes of quartan within three days, and those of tertian within four days. In aestivo-autumnal (subtertian or malignant) malaria, atabrine destroys the ring forms or schizonts, but has no effect on the gametocytes. Therefore, it is essential in the therapy and control of aestivo-autumnal malaria to use plasmochin as an adjunct. The fever usually disappears in forty-eight to sixty hours after atabrine treatment has begun.

The recognised method of treatment today is the oral administration of $1\frac{1}{2}$ grains (0.1 gm.) of the drug three times a day for five days only. It can also be administered by intramuscular and intravenous injections and the drug, in ampoule form, is available for this purpose. It has been suggested that before beginning any antimalaria therapy we wait until the patient has established a regular chill. This, apparent-

ly, reduces the number of subsequent relapses.

Atabrine is not an unpleasant drug to take and is not depressing. It is well tolerated and has a low toxicity. It has been administered to pregnant women, young children, cases of blackwater fever, and in quinine hypersensitiveness, as well as to persons suffering from other diseases such as pneumonia and influenza. It is rapidly absorbed without decomposition and excreted relatively slowly (several weeks). There is sometimes a temporary yellow coloring of the skin which soon passes off, and which is due solely to the drug itself and not to the production of a true jaundice.

Any one who has taken quinine in the usual amounts and over the lengthy period deemed necessary to completely rid one of malaria, is likely to welcome this new agent. Physicians and health workers alike appreciate the almost insuperable difficulties encountered in getting the infected patient to persist in the taking of quinine over the long period of time—four to six weeks—necessary to bring about a complete cure and to render such patient non-infectious to the mosquito. In order to accomplish the latter, the gametocytes or sexual forms of the plasmodium must be destroyed. While quinine promptly controls the clinical symptoms through destruction of the asexual forms, its action on the sexual forms is much slower and more uncertain. All of the evidence thus far available points to the fact that in tertian and quartan malaria atabrine destroys promptly and permanently both types of parasite. If such a happy result can be had in five days time, through the use of atabrine, as contrasted with five weeks with quinine, the verdict can go but one way, even in face of the fact that the initial cost of the drug may be more expensive. If, through extensive mass application of atabrine both in the treatment and control of malaria, the present claims are substantiated clinically, the possibilities are certainly brighter of breaking the important link in the chain between the infected patient and the vector, the anopheles mosquito.

In ten counties of Alabama in the Tennessee River basin malaria is a major health problem and these counties likewise fall within the area embraced by the Ten-

1. United Fruit Company, Medical Department, 20th Annual Report, 1931.

2. McNabb, P. E., and Swartz, S. C.: Atebrin in the treatment of malaria in the Philippine Islands. *Am. J. Trop. Med.* 14: 309 (July) 1934.

3. Hoops, A. L.: Observations on cure of malaria with atabrine, *Brit. M. J.* 1: 993 (June 10) 1933.

nessee Valley Authority. Alabama's health department, in cooperation with the Medical Section of the Tennessee Valley Authority, is now engaged in making a malaria blood survey of the population within the flight range of the anopheles mosquito (about one mile) in all these ten counties involved. Such a survey should give a fairly accurate picture both of our present malaria problem and also establish a base line for future comparison. In an effort to bring about some sort of therapeutic control, atabrine is being made available through our county health officers to all physicians desiring to employ this drug and particularly with their indigent cases. Physicians are urged to make free use of blood studies in their malaria cases, in order to definitely define the type of infection presenting—whether tertian, quartan or estivo-autumnal. The technicians working in the Valley Laboratories of the health department are in position to give this information and upon it will be based the decision as to whether atabrine should be given alone or be supplemented by the use of plasmochin.

J. N. B.

Committee on Legislation and Medical Economics

The Alabama Relief Administration has four objectives: To provide (1) Food; (2) Clothing; (3) Shelter; and (4) Medical Aid. At the inception of its work in this State, there was urgent need of food, clothing and shelter. The county units of this newly created organization had not passed many months until they realized the necessity of medical aid. In the emergency, physicians were appealed to to give their services gratuitously, which they did very generously. Between the period 1932 to date the problem of medical aid has become more and more acute.

The Alabama Relief Administration has built up a huge organization around its first three objectives—food, clothing and shelter. The details of the plans and workings of this organization have been widely circulated. The fourth objective, medical aid, has been a rather difficult problem and something of a boomerang, passed on to the medical profession, but now returning to

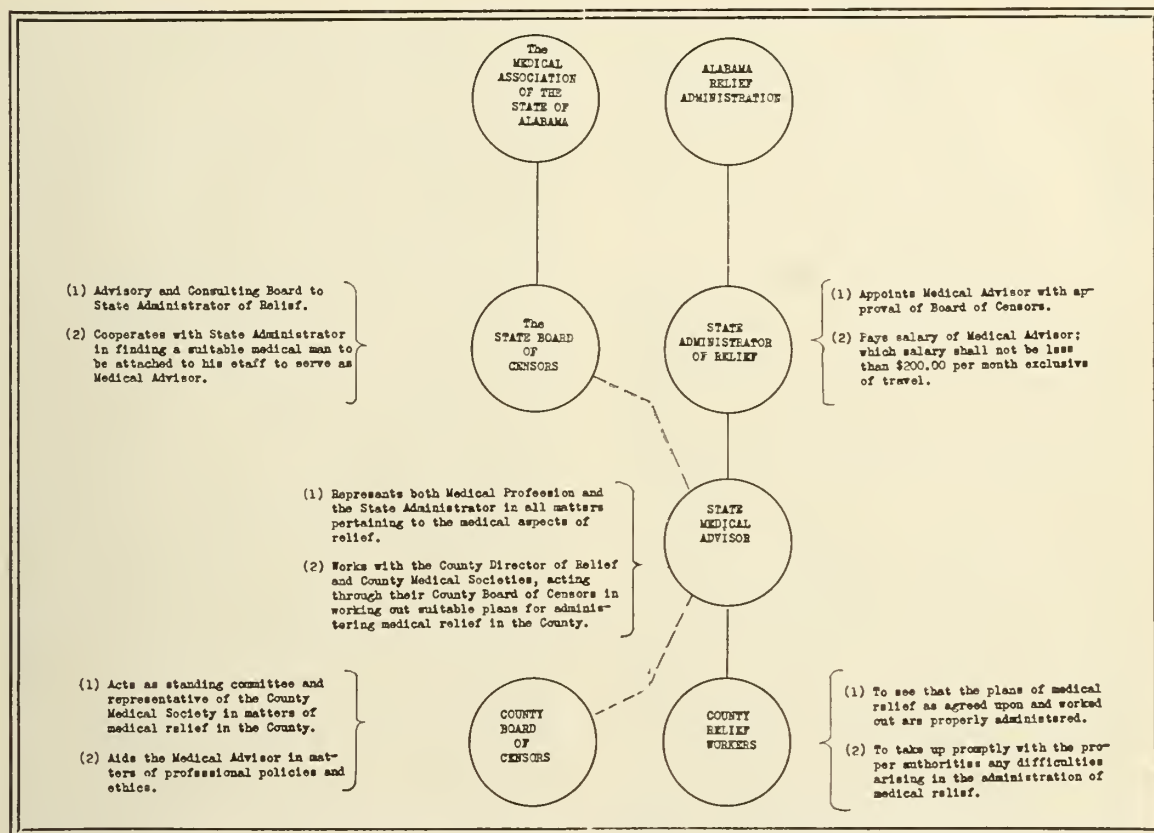
the county units of the Alabama Relief Administration.

The Committee on Legislation and Medical Economics of the Medical Association of the State of Alabama maintains that only physicians are capable of judging what is adequate medical service and who is capable of giving it. Lay people, regardless of their connection with any relief organization, have not the training necessary for deciding questions of medical aid. The course of events has shown that, from the beginning, it would have been wise had the Alabama Relief Administration more fully sought the aid of the medical profession in this State, explaining its needs and objectives and asking the profession's cooperation. Much of the misunderstanding between county relief organizations and county medical societies might thus have been avoided. The delay in building up the program for the fourth objective has created a feeling of injustice, not to say resentment, among some parts of the medical profession. However, the medical profession must assume its share of the blame for the present state of affairs between county relief organizations and county medical societies. With medical problems on every side, how could the lay directors of relief agencies keep from promoting some plan of medical aid if the medical profession offered none? It is impossible for the medical profession to control and direct medical aid to indigents if they have no plan for doing so.

The National Relief Organization in Washington has ruled that State Relief Directors must deal with the organized medical profession, which ruling clearly shows an effort on its part to keep control of purely medical problems in the hands of the medical profession where it rightfully belongs.

In 1933 this Committee made attempts to solve the problem of medical relief to those on Federal relief rolls. It was not as successful as it had hoped to be. However, the discussions and conferences of last year helped to pave the way for the present plan now being offered as a starting point.

In trying to work out some uniform plan for medical relief, the Committee has had many conferences with the Alabama Relief Director and has reviewed the present



methods of medical relief and the amount of money being spent each month. The most important information necessary was finding what the Alabama Relief Administration needed in the way of medical relief, what part medical relief was to play in their program, and how their organization felt it might best cooperate with the physicians.

Fortunately, the Medical Association of the State of Alabama is so constructed that it is possible to readily tie in with the Alabama Relief Administration.

The plan here submitted definitely ties the Medical Association of the State of Alabama in with the Alabama Relief Administration and at the same time upholds all the principles laid down by the House of Delegates at the last meeting of the American Medical Association (J. A. M. A., Sept. 23, 1933, pp. 1026 and 1027).

The plan (see accompanying diagram) is as follows: (1) The Alabama Relief Administration through the State Administrator attaches to its staff a medical advisor, the educational and professional qualifications of this advisor to be approved by the Board of Censors of the Medical Associa-

tion of the State of Alabama. He will be attached to the staff of the Alabama Relief Administration and paid by that organization. (2) The medical advisor will be representative of the medical profession and the Relief Administration in matters of medical relief. He will work with county relief directors and county medical societies, acting through the County Board of Censors in formulating a plan of relief in each county. (3) The County Board of Censors will serve as a standing committee and representative of the county medical society in matters of medical relief. The County Board of Censors can delegate this authority to a single member or to a committee to represent the county society in matters of relief, if it wishes. The County Board of Censors will aid the medical advisor in matters of professional policies and ethics as they relate to medical relief. The County Relief Agency will be responsible for the administration of the plans of medical relief as agreed upon and worked out and, in case of doubt, take up with the delegated authorities any difficulties arising in the administration of medical relief. This

plan preserves the principles laid down by the American Medical Association (J. A. M. A., Sept. 23, 1933, pp. 1026 and 1027); gives the Medical Association of the State of Alabama a direct voice in the medical aspects of relief and makes the contact of county relief agency and county medical society through a physician.

Dr. B. F. Austin has been selected by the Alabama Relief Director and approved by the Board of Censors of the Medical Association of the State of Alabama and the Committee on Legislation and Medical Economics. He is thoroughly familiar with conditions and the profession in every county in the State and knows the problems of the physicians in each county. He has also had opportunity to study the workings of the Alabama Relief Administration in counties. The Committee feels that he is the best qualified man in the State to handle this rather difficult task and is thoroughly capable of working out this complicated problem. He will begin his new work October 1st and will contact each county society as rapidly as he can cover the State.

Every county board of censors should study the rules and regulations prescribed by the Federal Emergency Relief Administration in the Journal of the American Medical Association, the reports of the Alabama Relief Administration on medical expenses and the cost of medical aid in their county before Dr. Austin reaches them.

It is impossible for this Committee to suggest any plan which will solve every

problem peculiar to each county. A study of the Alabama Relief Administration expenses in each county in the State shows a wide variance in needs and costs of medical aid, a fluctuation in the demands month by month and a wide variation in the physicians doing relief work. There is also a wide variation in fees charged by physicians in the counties of the State.

Under this plan it should be possible to quickly work out, through Dr. Austin and the County Board of Censors (or County Medical Society) a satisfactory solution of any perplexing questions. The rate and amount of charges will probably be the greatest problems.

The medical profession can neither afford to dodge nor shirk its responsibility in the question of medical relief. We cannot entirely blame the failure of solution of this problem on the relief organization as this is the first definite plan proposed by the Medical Association of the State of Alabama, although relief has been given for two years. This plan seems to offer a solution of medical relief problems with the least sacrifice of the principles which the Medical Association of the State of Alabama stands for.

The Medical Association of the State of Alabama has for sixty-one years lived up to its full responsibility to the people of this State. This Committee now hopes that with this plan at least some of the more difficult questions of medical relief will be solved in every county.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

SICKNESS AND THE DEPRESSION

Every physician and every health worker should be keenly interested in any analytical study which attempts to give concrete facts as to how this present prolonged economic depression is being reflected in sickness and illness amongst those who have felt its pinch most severely. Such a study has recently been made by the United States Public Health Service in cooperation

with the Milbank Memorial Fund which indicates a higher rate of disabling illness in families that have been reduced to poverty during the depression than in families whose financial condition was not so affected. Ten cities were chosen, one of which was Birmingham, and the sample population surveyed comprised 40,163 individuals in 9,130 families and largely of the wage-earning class. The income classification was: "Comfortable," signifying \$425 and over annual per capita income; "moderate," \$150-\$424 annual per capita income, and "poor," under \$150 annual per capita in-

come. This survey revealed the highest incidence of disabling illness in the group which suffered the greatest loss of income during the depression; viz., the group "comfortable" in 1929 and "poor" in 1932. An interesting feature of this study as it pertains to the communicable diseases of children is that for young children under five years the highest rate of infectious disease is exhibited by the "chronic poor" and the lowest rate by the three groups that were "comfortable" in 1929. Economic experience during the depression does not appear to be correlated with the illness rate for these diseases. Among the children in the ages five to nine and ten to fourteen, the sequence is reversed—the "comfortable" groups having the highest rates and the "poor" the lowest.

From the above survey, therefore, it would seem that the children of the poor contract communicable diseases at an earlier age than do the children of those in better circumstances and that, when the child first knocks at the school door for entrance, more from the "poor" class have actually had these diseases than those from the better walks of life. This finding is hardly to be wondered at, in view of the more sheltered home environment of the latter group.

This study has been carefully and painstakingly done and its revelations, based on a critical analysis of a large amount of compiled data, serve to substantiate the generalised concept that the severest blows from illness fall at the weakest and most vulnerable point—upon the necessitous and near-necessitous.

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

THE PROPER LABORATORY SPECIMENS IN TYPHOID FEVER

During the past few months the question of the proper laboratory specimens to be submitted for the diagnosis of typhoid fever has frequently arisen. Since the causative bacterium can be isolated from the blood, from the feces, from the urine, from the rose spots, and agglutinins may appear in the blood stream, a wide variety of samples can be sent for examinations. However, the value of these specimens is enhanced

if they are taken at the proper time in the course of the disease. Routinely the samples most usually collected are blood for culture and agglutination and feces and urine for the isolation of *Bacterium typhosum*.

According to Topley and Wilson¹ (1932) "a very instructive picture of the usual course of events during an attack of typhoid fever may be obtained by charting, for the successive weeks of the disease, the average frequency with which *Bact. typhosum* can be isolated from the blood, or from the feces, and the frequency with which the serum gives the diagnostic agglutinin reaction." A copy of the graph which appears in their book is reproduced in Figure I.

As will be seen from the figure, the onset of the disease is accompanied by a bacteremia. During the first week a positive blood culture can be obtained in nearly all cases, but as the disease progresses, the chances of isolating the organism become less and less. Coleman² (1929) has stated that "when facilities are available, a blood culture should be made in every case of suspected typhoid fever. It is the most rapid method by which the diagnosis may be established." Such facilities are furnished by the Bureau of Laboratories. A special mailing case containing lithium chloride-bile medium is available to all practising physicians who desire to collect blood samples on suspected typhoid cases. Furthermore, all bloods which are submitted for any of the agglutination tests are cultured in the same medium if there is sufficient clot. In this way it has been possible to pick up a number of typhoid cases which would have been missed because of atypical symptoms.

Although the value of the Widal reaction has assumed less importance since more and more emphasis has been placed on the blood culture, it has its usefulness among the diagnostic tests for typhoid fever. The graph (Fig. 1) shows a slowly rising titre beginning about the third day of the dis-

1. Topley, W. W. C., and Wilson, G. S.: The Principles of Bacteriology and Immunity. Vol. II. William Wood & Company, New York, 1933.

2. Coleman, W.: Typhoid Fever. Nelson's Loose Leaf Living Medicine. Vol. I. Thomas Nelson & Sons, New York, 1929.

ease, attaining its highest point about the fifth week. The blood in practically all cases shows agglutinins in some stage of the disease, but under ordinary circumstances they are in negligible amounts until

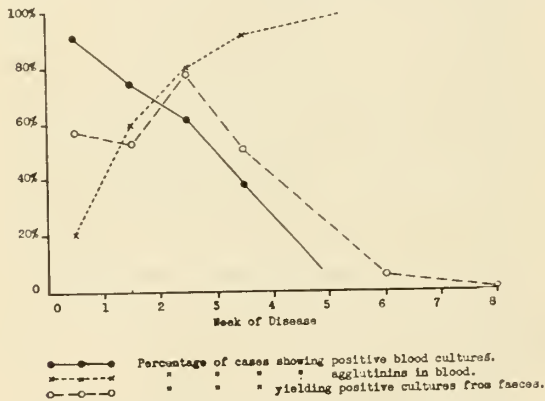


Fig. 1

From Topley and Wilson, "The Principles of Bacteriology and Immunity."

about the tenth day. A titre of 1:40 is considered doubtful, and a second specimen should be submitted, while a titre of 1:80 is diagnostic, if the limitations given below are taken into account. In these days of extensive typhoid preventive immunizations the agglutinins may remain for long periods of time in many individuals who have received the vaccine. Therefore, care should be exercised in interpreting the results on such persons. In these cases a second specimen should always be submitted, and a rising titre is good presumptive evidence that the disease is present. Furthermore, some cross-agglutination occurs with the paratyphoids and less frequently with other infections, but as a rule a series of specimens will give the correct diagnosis because a rising titre will be experienced with the causative organism.

The Bureau of Laboratories prefers to run the macroscopic Widal because of the greater accuracy in making the dilutions. For this purpose about 5 cc. of blood should be taken in the ordinary Wassermann tube. The microscopic Widal in which dried blood is used is discouraged although facilities are available for such tests.

Fecal cultures are extremely valuable when the disease has progressed beyond the point where blood cultures are unsatisfactory. Especially do they serve at times to confirm a positive Widal reaction. From

the figure (Fig. 1) it will be seen that the chances of success in this procedure gradually increase as the disease progresses, reaching the high point between the second and third week. Some cases may be positive after the first few days or after the third week but the ideal time to take them is between the second and third week of the disease.

Containers for fecal specimens are furnished by the Bureau of Laboratories. In these are two bottles containing lithium chloride glycerin. One of these should be inoculated with a small amount of feces, using the swab which is enclosed, and the other with urine. Attention should be called here to the importance of urine cultures because it has been found that in some cases positive results may be obtained from this source when the feces are negative. Park, Williams and Krumwiede³ (1924) state: "Of great interest is the frequent occurrence of typhoid bacilli in large numbers in the urine. The results . . . indicate that the typhoid bacilli are not apt to be found in the urine until the end of the second week of the fever, and may not appear until much later. From this on to convalescence they appear in about 25 to 50 per cent of the cases, usually in pure culture and in enormous numbers, even as high as 1,000,000 per cubic centimeter. They are found until several weeks or months after convalescence; in exceptional cases they persist for years."

In submitting specimens on suspected typhoid cases, the following points are important.

1. Whenever possible a blood culture should be taken early in the course of the disease, preferably the first week. It is the most rapid and easiest method for establishing a diagnosis.

2. The best time for the submission of blood samples for the Widal test is after the tenth day. The results must be interpreted with care because the previous administration of vaccine and cross-agglutination may cause confusion. Second specimens should be taken in cases where there is any doubt.

3. Fecal specimens are most apt to be positive between the second week and third

3. Park, W. H., Williams, A. W., and Krumwiede, C.: *Pathogenic Micro-Organisms*. Lea and Febiger, Philadelphia and New York, 1924.

week. It is most advisable to secure urine cultures at the same time fecal samples are taken.

4. Care should be exercised that the lithium chloride glycerin is not inoculated too heavily with feces.

BUREAU OF PREVENTABLE DISEASE CONTROL

D. G. Gill, M. D., Director

DIPHTHERIA INCREASING

Diphtheria during the first eight months of this year has shown a 30% increase in cases reported over the corresponding period of last year, and there has been a similar increase in mortality. Since the fall months always show the greatest incidence of this disease, 1934 promises to set a very unenviable record. This is very disappointing to all health workers since there is available an almost certain means of prevention in alum-precipitated toxoid.

The one-dose toxoid for the prevention of diphtheria was approved by the State Committee of Public Health early in 1933 and since that time the state laboratories have had it available for all physicians free of charge. The efficiency of this product in producing immunity has been further confirmed by additional use and wherever tried it has given excellent results. Walker¹ reports 100% protection as measured by the Schick test, while Keller and Leathers² found better than 96%. Of particular interest is the finding of these last workers, that the immunity produced develops very rapidly and that within 3-4 weeks nearly all children are protected.

With the older immunizing mixtures 3 to 6 months were required to produce immunity and as a result to achieve protection for the fall months of heavy incidence it was necessary to give the inoculations during the spring and early summer. This is still the best practice, but it is not too late to secure some protection for the remaining

months of high incidence by giving toxoid now.

Among the unorganized counties Baldwin and St. Clair have experienced an undue early incidence, while Calhoun, Cullman, Lauderdale, Madison, Marshall, Montgomery, and Talladega, among the organized counties, have had numerous cases. Experience in past years has shown that the counties in the northern part of the State usually have most of the diphtheria and it is in these counties that immunization is most needed.

Alabama has led the country so far in developing a means of prevention against diphtheria, but we are lagging far behind in our practical control of this disease.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

MILK CONTROL REGULATIONS AMENDED

The State Committee of Public Health has recently amended the Regulations Governing the Production, Handling, and Sale of Milk and Certain Milk Products, which were adopted in January 1929. The amendments include a definition of Vitamin D Milk; clarification of the definitions of a dairy farm or milk distributor, so that all milk which is sold is subject to grading; a slight change in the method of averaging bacterial plate counts and temperature readings; a provision that permits must be signed jointly by the County Health Officer and a representative of the State Health Officer; provision for the acceptance of triennial tuberculin tests in modified accredited counties; provision that milk houses shall have water piped into them, shall have stationary wash and rinse vats, and shall be partitioned; provision that distribution vehicles shall be covered and shall display the name of the dairy or its operator; admitting the high-temperature short-time (160° F. for 15 seconds) continuous flow method of pasteurization; changing the average bacterial plate count limit for Grade A Pasteurized Milk from 50,000 per cc. to 30,000 cc.; providing for the grading of butter-milk and defining "Home Churned Butter-milk;" providing that milk shall be bottled at the dairy farm or milk plant in which it is produced; and prescribing the basis for interpretation of these regula-

1. Walker, A. A.: One dose alum toxoid in diphtheria prevention, J. A. M. A. 103: 227 (July 28) 1934.

2. Keller, A. E. and Leathers, W. S.: Alum-precipitated diphtheria toxoid, rapidity of immunization following one dose, J. A. M. A. 103: 478 (Aug. 18) 1934.

tions. These amendments were adopted to bring the Alabama regulations into conformity with the present form of the U. S. Public Health Service Milk Ordinance.

The Alabama regulations, even with these amendments, do not exactly parallel the U. S. P. H. S. Milk Ordinance, the chief divergences being that chlorine is not accepted as the sole means of bactericidal treatment of milk containers, etc.; that permits to sell milk must be countersigned by the State Health Officer or his representative, and that grade determinations must be checked by a representative of the State Health Officer. These latter provisions have been included in order to assist county health officers to hold at a minimum the inauguration of milk production at dairy farms which are not equipped to meet Grade A Raw Milk production specifications, and to insure accuracy in the determination of milk grades. These two phases of milk quality control affect dairy economics as well as public health.

These milk regulations are in effect only when adopted by a county board of health. In order to spare county boards of health the responsibility of legislating for municipalities, the Division of Inspection has drafted an enabling ordinance for municipalities, which adopts the regulations of the County Board of Health by reference. This ordinance has been unofficially approved by the office of the Attorney-General, and legal precedent therefor has been established in opinions by the Alabama Court of Appeals.

The milk control program of the Division of Inspection includes the adoption of these amendments by county boards of health and the necessary action by municipal authorities, so that milk control standards in this State will be on a level with those recommended by the U. S. Public Health Service. Thus, comparisons of milk quality and safety made and published by the Public Health Service will not be unfavorable to Alabama.

C. A. A.

ANNUAL MEETING
SOUTHERN MEDICAL ASSOCIATION
SAN ANTONIO
NOVEMBER 13-16

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	July	August	Estimated Expectancy August
Typhoid	143	179	255
Typhus	24	35	11
Malaria	1158	1055	655
Smallpox	1	0	2
Measles	274	195	56
Scarlet fever	24	45	71
Whooping cough	144	126	102
Diphtheria	55	113	104
Influenza	6	13	28
Mumps	16	10	24
Poliomyelitis	4	15	4
Encephalitis	3	0	2
Chickenpox	3	12	7
Tetanus	4	2	7
Tuberculosis	263	204	396
Pellagra	41	29	79
Meningitis	0	4	4
Pneumonia	67	59	61
Syphilis (private cases)	189	226	157
Chancroid (private cases)	2	2	9
Gonorrhea (private cases)	193	159	184
Ophthalmia neonatorum	2	1	1
Trachoma	0	2	0
Tularemia	1	0	0
Undulant fever	4	10	3
Dengue	0	10	0
Amebic dysentery	5	0	0
Rabies—Human cases	1	1	0
Positive animal heads	62	71	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

Alabama, July 1934

CAUSES	Number of Deaths Registered July 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	July 1934	July 1933	July 1932
ALL CAUSES	1293	1127	2420	1028.7	923.3	963.0
Typhoid fever	10	14	24	10.2	9.4	9.1
Typhus fever					0.9	
Smallpox						
Measles	19	4	23	9.8	0.9	
Scarlet fever					0.9	
Whooping cough	27	14	41	17.4	7.3	9.6
Diphtheria	4	4	8	1.7	1.7	3.0
Influenza	9	4	13	5.5	6.4	4.8
Pneumonia, all forms	53	29	82	34.9	24.1	28.3
Poliomyelitis					0.4	
Tetanus	2	4	6	2.5	0.9	0.4
Tuberculosis, all forms	58	103	161	68.4	69.2	80.5
Tuberculosis, pulmonary	53	95	148	62.9	60.1	74.4
Malaria	13	10	23	9.8	8.2	7.8
Cancer, all forms	85	42	127	54.0	49.4	53.5
Diabetes mellitus	22	10	32	13.6	7.3	13.5
Pellagra	11	16	27	11.5	17.6	14.3
Cerebral hemorrhage, apoplexy	58	68	126	53.6	54.6	60.1
Diseases of heart	175	153	328	139.4	116.9	114.9
Diarrhea and enteritis						
Under 2 years	85	30	115	48.9	35.2	32.6
2 years and over	26	19	45	19.1	16.3	12.2
Nephritis	103	77	180	76.5	72.6	99.7
Puerperal state, total	21	25	46	19.5	16.3	12.6
Puerperal septicemia	4	5	9	3.8	4.3	4.3
Congenital malformation	11	1	12	5.1	5.6	6.5
Congenital debility and other diseases of early infancy	95	47	142	60.4	56.3	52.7
Senility	19	16	35	14.9	19.3	14.4
Suicides	10	1	11	4.7	6.9	7.8
Homicides	24	43	67	28.5	21.9	21.8
Accidental burns	1	5	6	2.5	3.4	3.9
Accidental drownings	4	9	13	5.5	7.3	12.2
Accidental traumatism						
by firearms	2	3	5	2.1	1.7	3.9
Mine accidents	1		1	0.4	2.6	0.4
Railroad accidents	11	8	19	8.1	6.0	4.8
Automobile accidents	16	8	24	10.2	15.9	13.5
Other external causes	45	21	66	28.0	21.5	27.4
Other specified causes	197	170	367	156.0	135.3	159.3
Ill-defined and unknown causes	76	173	249	105.8	103.1	76.6

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

THE SAN ANTONIO MEETING

OF

THE SOUTHERN MEDICAL ASSOCIATION

(From South. M. J., September 1934)

Because San Antonio is off-center in the Southern territory, some difficulty might have been anticipated in planning a program to be held there which would be representative of the medical profession of the whole country. However, arrangements have been made with encouraging ease, and physicians from Boston, New York, Philadelphia, Chicago, Rochester, San Francisco, from France and England, as well as equally distinguished men from points nearer, will address the Association at its twenty-eighth meeting. There will be in addition several Mexican physicians on the program. Americans are fortunate in having an unusual opportunity of learning how medicine is practiced in this little known, immediately adjacent country.

On Tuesday, the first day of the meeting, there will be a general medical clinical session and a general surgical clinical session. On the same day will be held meetings of the Texas Pediatric Society, Texas Dermatological Society, Texas Ophthalmological and Otolaryngological Society, and the Southern Branch of the American Public Health Association.

Tuesday night will be Presidents' Night. Dr. Hugh Leslie Moore, of Dallas, will deliver his presidential address. Presidents of a number of other important medical organizations, both American and foreign, will be with Dr. Moore on the platform and will also speak briefly.

A general clinical session conducted by specialists from different parts of the country will be held Wednesday. Several sections will meet concurrently. Thursday and Friday will be occupied with the various sections and the associations meeting conjointly with the Southern Medical Association.

State medicine has become a subject in which every practitioner of medicine has

some interest. There will be a round table luncheon for a discussion of state medicine, probably on Wednesday. The luncheon will be presided over by Dr. Edward H. Cary, of Dallas, past president of the Southern Medical Association and of the American Medical Association. Dr. Cary has studied this question for a number of years. He has brought to bear upon it the clear vision and ability with which he has attacked other scientific and organizational problems. The subject will be discussed by men with diverging views. All are invited to attend.

On Thursday there will be two round table luncheons, one on general medicine and one on general surgery. Questions will be answered by outstanding visiting physicians and surgeons.

On Tuesday evening following the general meeting will be held the President's reception and grand ball, and on Thursday night a unique entertainment will be a "Night in Old Mexico," with Mexican music.

Alumni reunions and special dinners will be held on Wednesday evening.

The Gunter Hotel is general hotel headquarters. The registration, scientific and technical exhibits will all be on its mezzanine floor, and many of the sections will meet in the hotel. The Plaza Hotel is headquarters for the American Society of Tropical Medicine, the National Malaria Committee, and the Southern Branch, American Public Health Association; and the St. Anthony Hotel is headquarters for the Southern Association of Anesthetists and the Woman's Auxiliary. The Clinical Sessions, some section meetings, some conjoint meetings and the luncheons will be held at the Plaza and St. Anthony Hotels. All scientific activities will be situated within one to three blocks of each other, all in downtown San Antonio.

Following the San Antonio meeting, the Association will sponsor an official trip to Mexico, with Mexico City as the focal point. Arrangements are being made for a special train for the Mexican trip. It is planned to stop long enough in Monterrey to see the industrial city of Mexico. From Mexico City other places of interest and importance will be visited. In Mexico City, physicians will be interested in seeing the Hospital de Jesus, built by the conqueror, Cor-

tez, in 1527, which has been in continuous operation as a hospital, as a place for the care of the sick, for 407 years. It is the oldest hospital on the Western Hemisphere.

Reduced railroad rates have been granted by all railroads, the rate being one and one-third fare for the round trip to San Antonio, going and returning the same way, or going one way and returning another, with a final limit of thirty days. To secure the reduced rates certificates should be obtained from the Southern Medical Association office about three weeks in advance of the meeting.

San Antonio has a large and active medical profession and medical facilities in keeping with the size and importance of the city. Connected with the army posts also are medical men of outstanding reputation. Physicians interested particularly in aviation will enjoy a visit to Randolph Field, the "West Point of the Air." The medical society of San Antonio, the Bexar County Medical Society, has its own home, very completely equipped for its purposes.

Plans for the meeting November 13-16 are in a very promising stage, and hotel reservations should be made early.

* * *

AN INVITATION

The Women's Auxiliary to the Southern Medical Association will meet in San Antonio, Texas, November 13th to 16th.

Headquarters for the women will be in the St. Anthony Hotel where all meetings and functions will be held.

It is earnestly desired that our women of the South will make every effort to attend this meeting *en masse*. Your presence will not only help the meeting but will be a great inspiration to you yourselves. San Antonio is delightful and everything possible is being done to make your visit enjoyable.

A cordial and pressing invitation is extended to everyone to attend the Auxiliary Luncheon on Wednesday, November 14th to meet Mrs. Robert Tomlinson, National Auxiliary President, and other distinguished guests.

Most cordially yours,
Mrs. Southgate Leigh, President.

RESOLUTIONS

(Publication approved by the Chairman of the Association's Committee on Prevention of Cancer)

The following resolution was presented by the Executive Committee and adopted unanimously by the American Radium Society, Cleveland Session, June 12, 1934.

Whereas, It has been proven that radium and x-rays, when used properly, and in sufficient quantity, is efficient in the treatment of cancer in certain locations, and

Whereas, There is a general fear in the public mind from x-ray or radium burns, which because of this fear, prevents competent radiologists from using sufficient radium or x-ray to produce the best results,

Be It Resolved, That we as radiologists recognize that in the treatment of malignant disease, it is often necessary to carry the treatment on to the extent of producing a violent reaction in the surrounding tissues, which may cause the skin to peel, and blisters to form, in order to give sufficient treatment to overcome the malignant disease. We believe, therefore, that it is justifiable to produce a second degree radiodermatitis when necessary.

* * *

Resolutions adopted by American Radium Society at Annual Meeting, Cleveland, June 12, 1934; also adopted by American College of Radiology, June 12, 1934.

THE INDISCRIMINATE USE AND RENTAL OF RADIUM

Whereas, It is now recognized that radium has been demonstrated to be of definite value in the treatment of disease, and

Whereas, Some states and many communities in the country have little or no radium available, and

Whereas, Funds are not always available for the purchase of suitable preparations of radium for use by those physicians who are qualified in radium therapy, and

Whereas, We recognize that radium is an agent quite as potent for doing harm as for doing good when used without sufficient skill or training and with the hope of protecting the uninformed public from serious and irreparable injury from improper and insufficient treatment,

Be It Resolved, That we consider it improper, unethical and detrimental to the science of radiology and to the good of suffering humanity for commercial laboratories to attempt to give advice or directions as to the use of radium in the case of a patient whom the person giving that advice has not even had the opportunity to examine. In other words, it is just as difficult to give such advice and directions as it would be for a surgeon to give directions for the use of rented surgical instruments so that an untrained physician might attempt an operation. Various commercial companies advertise both in the Journals and through the mails, medical advice for the purpose of making sales or renting radium or radon. This places those corporations in the field of practicing medicine.

Be It Resolved, That the same criticism be applied to institutions which rent or furnish their

radium to those members of their staff or outside of the staff who are unskilled in radium application.

Resolved, That the same criticism applies to many individual owners of radium.

Resolved, That we regard the approval of the National Board of Radiological Examiners as the minimum standard for those assuming the responsibility for using radium. We recommend as wide publicity of this Board's existence and approval as is possible to the public, consistent with ethical practices, as the most effective safeguard which can be afforded them.

Resolved, That we recommend the refusal of advertising matter in National and State Journals when the companies concerned are advertising a medical consulting service or are advertising such service through the mails in connection with their sale or rental of radium.

Resolved, That we disapprove of any doctor's acting as a consultant to a commercial company carrying on such a campaign of public or private advertising and that we consider such an association sufficient grounds to warrant disbarment from the approval of the National Board of Radiological Examiners.

Resolved, That we recognize the ethical commercial company as a necessity. It is the advertised consulting service that is at fault. It is recognized that such restrictions on the advertising of a medical service will in no way hamper properly qualified radium therapists in obtaining adequate supplies of radium or radon for the purposes in which they are qualified to employ it.

Resolved, That we approve an informal medical consultant for the guidance of those commercial companies who refrain from advertising such professional service, either publicly or privately and that in such case their informal consultant be one approved by the National Board of Radiological Examiners.

* * *

The Radiological Society of North America will hold its next annual meeting at the Hotel Peabody, Memphis, Tennessee, December 3-7, 1934. The medical profession is cordially invited to attend. Further information can be obtained by addressing the Secretary-Treasurer, Dr. Donald S. Childs, 607 Medical Arts Building, Syracuse, New York.

* * *

The Northeastern Division of the Association met in Huntsville, September 18, Vice-President W. M. Salter of Anniston presiding. Among those contributing papers were Drs. H. E. Johnson, Assistant Professor of Clinical Medicine, Alfred Blalock, Associate Professor of Surgery, and John C. Burch, Associate Professor of Gynecology, Vanderbilt University School of Medicine, Nashville.

Book Abstracts and Reviews

Bronchoscopy, Esophagoscopy and Gastroscopy, (Third Edition): By Chevalier Jackson, M. D., Sc.D., LL.D., F. A. C. S., Professor of Bronchoscopy and Esophagoscopy, Temple University; Bronchoscopist, Temple University Hospital; and Chevalier L. Jackson, A. B., M. D., M. Sc. (Med.), F. A. C. S., Professor of Clinical Bronchoscopy, Temple University; Bronchoscopist, Temple University Hospital. Third Edition, Reset. 485 pages with 207 illustrations. Philadelphia and London: W. B. Saunders Company, 1934. Cloth. \$9.00 net.

This book contains the essentials of what one should know about bronchoscopy, esophagoscopy and gastroscopy. It is brief and accurate. The Jacksons are the fountain source of knowledge in this type of work; the book is the expression of two who really know their subject. The style is clear-cut, the content practical and statements backed up by clinical data that are without equal in the field of bronchoscopy. The chapter on tracheotomy alone is worth its weight in gold for every surgeon. One is impressed with the uncanny skill the authors use in removing foreign bodies from the esophagus and bronchi. The Chevalier Jacksons are the Houdini of the medical profession in this type of work—so skilled that they work like magicians. Two objections are noted. Pilling and Company are mentioned too prominently. Suspension laryngoscopy, as perfected by the late Doctor Robert C. Lynch, is not mentioned.

F. M. T.

The Sinister Shepherd: A Translation of Girolamo Fracastoro's "Syphilides Silve de Morbo Gallico, Libres Tres", by William van Wyck. The Primavera Press, Los Angeles, Publishers. 1934. 85 pages. Cloth.

"Among the scientists, to be a physician was a distinction; to be a poet was to be noble; and to be both was to be very near the godhead. Girolamo Fracastoro was both." In 1530, he published his poem on syphilis. His understanding of the symptoms of the disease, its period of latency, and its contagiousness were more modern than his ideas of therapeutics. It was he who gave the disease the name by which it is known to us today.

The translation of William van Wyck is that of a scholar whose original writings and translations are well known in this country and abroad. His few introductory pages give evidence not only of his scholastic ability but his sense of humor as well.

Well printed, illustrated with old woodcuts and engraving, it is a volume intended not for the masses but for the "discerning bibliophile."

C. K. W.

A Textbook of Gynecology, (Second Edition): By Arthur Hale Curtis, M. D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of Staff and Chief of the Gynecological Service, Passavant Memorial Hospital, Chicago. Second edition, reset. 493 pages with 300 original illustrations, chiefly by Tom Jones. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$6.00 net.

The reviewer has never before had the pleasure of reading a volume containing as much valuable data to the page as are found in this book. The author possesses to a marked degree the capacity of saying much in few words. The whole field of gynecology is covered thoroughly. There are few things not in this book which should have been in-

cluded and a brief bibliography after each chapter refers the reader to the proper source for that information. While for the most part the chapters deal with individual disease entities like gonorrhea, carcinoma of the uterus or ovarian tumors, a few wisely selected chapters deal with important symptom complexes like amenorrhea, dysmenorrhea and backache.

The revised edition includes notes on the theelin treatment of gonorrheal vaginitis, the Nicolle' reaction in the diagnosis of chancroid, the Frei test in the diagnosis of lymphogranuloma inguinale, the calposcopic examination of the cervix and Schiller's iodine test for early carcinoma of the cervix. The author stresses the description of the early stages of malignancy rather than the usual classical but hopeless text-book picture. His treatment is conservative. Operative procedures are well described and illustrated. C. K. W.

Poems of William Gayle, First Edition, Limited to 2,000 copies. The Paragon Press, Montgomery, Alabama, Publishers. 105 pages. Cloth. Price \$1.75.

If in the sixteenth century it was possible for a man to be an outstanding physician and a poet of distinction, in the twentieth century it is quite probable that some of our distinguished physicians will have at least a keen interest in good poetry and an admiration for the man who can write it even though they themselves are not capable of being poets. A native Montgomerian, well versed in the technicalities of poetry and trained by several years of teaching Southern college students, has written a book of poems which should afford him some right to be called a poet of more than average ability. A varied assortment of poems comprise this volume. There are romantic ballads for young lovers, humorous Mother Goose parodies dealing with the present economic experiments, and, for the more serious, a group of historical poems dealing with the discovery of America, the settlement at Jamestown and the Pilgrim Fathers. While the first two groups of poems may appeal to the casual reader, Gayle's claim to fame rests on the perfection of his three historical poems. Each line has been written only after deep thought and deliberation and every word has been carefully selected. The result is a group of poems that approach perfection. C. K. W.

Truth About Medicines

PROPAGANDA FOR REFORM

Bilivaccin.—The use of "Bilivaccin" immunization against typhoid, cholera and dysentery is still strictly in an experimental stage. Neither this product nor any other "vaccine" product recommended for oral administration has been accepted by the Council on Pharmacy and Chemistry. The only safe and generally accepted method of immunization against typhoid is by the injection of vaccines composed of killed bacilli. (Jour. A. M. A., August 25, 1934.)

Antihormones.—Thirteen years ago, active glandular extracts were few and most endocrine therapy was "polyglandular." Today, however, there are many pure or nearly pure extracts the effects of which are fairly well known and more or less controllable. It was thought that these preparations must surely at last provide effective means for the treatment of disease; and they have been extensively (even incautiously) employed for this purpose. Potent endocrine preparations are often administered to patients and frequently the desired effects may be attained; but, curiously, an individual here and there, who should promptly be cured by this extract or that, not only fails to improve but occasionally even becomes worse. The dose is increased without effect; the preparation is then condemned or the patient given up as hopelessly refractory. Now comes an answer to those who have been reckless enough to believe in the endocrine millenium. The organism does not so readily accept assaults on its glandular equilibrium, for, as Collip and his associates have just shown, there are "antihormones." Repeatedly, warnings against the indiscriminate application to therapeutics of our still fragmentary knowledge of glandular physiology have been issued by those who have provided the foundation for the present exceedingly active work in this subject. Only a year ago the Council on Pharmacy and Chemistry pointed out the possible dangers of the unconsidered administration of such active agents in the field of gynecology. Recent investigations provide emphatic substantiation of this point of view. (Jour. A. M. A., August 18, 1934, p. 492.)

Blood Building Claims in Advertising.—The Committee on Foods reports that the whole process of blood regeneration is complex, involving many factors that may be affected by pathologic or disease conditions as well as by adequacy or inadequacy of the diet in iron. Anemia may be due to an inadequate diet, but pathologic conditions are frequently involved. The Committee feels that anemia and blood regeneration are not appropriate subjects for advertising addressed to the public. Blood building claims, therefore, should be excluded from food advertising. (Jour. A. M. A., April 21, 1934, p. 1300.)

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THE ETIOLOGY AND PATHOLOGY OF BRONCHIECTASIS*

By
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University, Alabama

DEFINITION

Bronchiectasis is a descriptive term signifying dilatation of one or more bronchi. The bronchial dilatation may be either congenital or acquired. No implication in the term itself is made regarding any associated infectious or inflammatory process. Any longstanding bronchial dilatation, is, however, almost invariably associated with infection and inflammation. Clinical use of the term bronchiectasis has therefore come to signify a congenital or acquired condition, characterized not only by dilatation, but also by infection and inflammatory changes in the affected bronchi and adjacent lung tissue.

HISTORICAL

Bronchiectasis was first observed by Jean-Bruno Cayol, an assistant of Laennec, in 1808.¹ Recognition of this condition as a distinct clinical and pathologic entity was established by the publication of the further observations of Rene Laennec² in his classical "De L'Auscultation Mediate" in 1819.³ Since that time medical interest in bronchiectasis has chiefly centered in improving the methods of diagnosis and treatment and in determining the essential factors in its production. The introduction of lipiodol⁴ by Sicard and Forestier⁵ in 1921 constituted an epochal advance in our methods of diagnosis and, in addition, has proven to be

of some therapeutic value. Noteworthy advances in the treatment of bronchiectasis consist of the introduction of postural drainage by Quincke⁶ in 1898 and the advocacy of more radical surgical procedures in the present century. Extensive clinical and experimental investigations disclose a number of factors which may apparently play a part in the production of a bronchiectasis. A discussion of these etiologic factors and the pathologic changes which they induce comprises the main subject of this article.

INCIDENCE

The incidence of bronchiectasis is much greater than was formerly suspected. Prior to the introduction of visualization methods in 1921 many of the early or mild cases of bronchiectasis passed undetected and the condition, as represented by the advanced cases with marked clinical signs and symptoms, was considered relatively rare. With the widespread diagnostic use of lipiodol, however, many patients formerly classed as cases of tuberculosis or chronic

1. Garrison, F. H.: History of Medicine, Ed. 4. Philadelphia, W. B. Saunders Co., 412, 1929.

2. Laennec, R. T. H.: De L'Auscultation Mediate, Ed. 1. Paris, Chapter III, 1819. Translation of Sir Wm. Hale-White.

3. It is of interest to note that Laennec in 1819, very shortly after publication of his famous book in which bronchiectasis was first described, fell ill and eventually died seven years later with symptoms strongly suggestive of a (tuberculous) bronchiectatic condition. Sir William Hale-White: Life of Laennec, London, Medical Classics Series.

4. Lipiodol is an iodized poppy-seed oil containing 40 per cent of iodine. It is non-toxic, non-irritating, and possesses a very high absorption coefficient to roentgen rays.

5. Sicard, J. A., and Forestier, J.: Iodized oil as contrast medium in radiology, Bull. et mem. Soc. med. des hop. de Paris. 46: 463 (March 17) 1922.

6. Quincke, H.: Berl. klin. Wchnschr. 35: 523, 1898.

*Part 1 of a symposium on bronchiectasis, presented to the Association in annual session, Birmingham, April 17, 1934.

*From the Department of Pathology and Bacteriology, School of Medicine, University of Alabama.

bronchitis have been found in reality to be cases of bronchiectasis. Ochsner⁷ states that from his experience "he is forced to conclude that bronchiectasis is the most frequently encountered chronic pulmonary affection, occurring even more frequently than pulmonary tuberculosis." The frequency with which pulmonary tuberculosis and bronchiectasis are associated and the difficulty in many cases of differentiating between tuberculous and nontuberculous bronchiectasis is, of course, well recognized. The frequency, however, with which nontuberculous cases of bronchiectasis are diagnosed tuberculous and sent to sanatoria for treatment is not so well known and deserves emphasis. Thus Hamilton⁸ states that "patients with nontuberculous pulmonary diseases are constantly being sent to these institutions (tuberculous sanatoria) and constitute from 25 to 50 per cent of the patients admitted."

CLASSIFICATION OF BRONCHIECTASIS

Classification of pathologic conditions on an etiologic basis is always most desirable but in the case of bronchiectasis presents some difficulty. The difficulty lies in the fact that the etiologic factors which may be concerned are both numerous and their relative importance and mode of action still debatable. For the purposes of this article, however, a general classification, based in as far as possible on recognized etiologic factors, is here presented.

- I. Congenital Bronchiectasis
 1. Fetal—Congenital cystic disease of the lung
 2. Atelectatic
 3. Congenital malformations of bronchi
 - (a) Congenital weakness
 - (b) Congenital stenosis
 - (c) Congenital web
- II. Acquired Bronchiectasis
 1. Acute
 - (a) Acute bronchiolectasis
 2. Chronic
 - (a) With specific etiology
 - (b) With nonspecific etiology

Chronic acquired bronchiectasis with nonspecific etiology includes the greater number of clinical cases of bronchiectasis. It is therefore regarded as the group of great-

est importance and will be given the most attention. The other groups will be discussed briefly.

Fetal bronchiectasis or congenital cystic disease of the lung was first described by Grawitz.⁹ It is usually seen in children and consists essentially of a congenital dilatation of bronchioles with the formation of numerous cyst-like cavities lined with flattened, cubical or high columnar, sometimes ciliated, epithelium. As a result variable amounts of lung tissue are converted into a mass of nonfunctional cystic cavities. If but a small amount of lung tissue is involved, the condition may pass unrecognized; should infection supervene, however, the typical signs and symptoms of a bronchiectasis appear.^{10, 11}

Congenital atelectatic bronchiectasis is the result of a persistent fetal atelectasis. As Hedblom¹⁰ has pointed out, "a persistent fetal atelectasis is favoured by the relationship between the lung and pleural cavity at birth. At that stage of life the volume of the pleural cavity is only slightly greater than that of the contained lung. The elastic tension of the lung is therefore slight and the negative intrapleural pressure is correspondingly low. Beginning respiration results in relatively feeble inspiratory inflation of the fetal alveoli, and some of them may remain in the fetal atelectatic state, or, as a result of intercurrent disease, may become atelectatic during infancy and early childhood and remain so. Later the pleural cavity grows relatively more voluminous than the lung. There results therefore increasing dilating stress in the bronchi." With the bronchial dilatation thus produced the addition of infection results in the clinical picture of a bronchiectasis.

Stewart¹² in 1867 considered that a congenital weakness of the bronchial wall was the underlying cause in a proportion of cases of bronchiectasis. The bronchi were thus unable to withstand the strain, even within

9. Grawitz, H.: Ueber angeborene bronchiectasie, Virchow's Arch. f. path. Anat. 82: 217. 1880.

10. Hedblom, Carl A.: Pathogenesis, diagnosis and treatment of bronchiectasis, Surg. Gynec. Obst. 52: 406 (February) 1931.

11. McGillicuddy, O.: Acute generalized bronchiolectasis with bullous emphysema, Ann. Otol. Rhin. & Laryng. 40: 1146 (December) 1931.

12. Stewart, T. G.: Edinburgh M. J. 13: 39, 1867, quoted by McGillicuddy (footnote 11).

7. Ochsner, Alton: Bronchiectasis, Am. J. M. Sc. 179: 388 (March) 1930.

8. Hamilton, W. F.: Nontuberculous pulmonary disease, Arch. Surg. 14: 218 (January) 1927.

normal physiologic limits, of the powerful respiratory efforts in cough and violent exercise. Duken¹³ believes that there may be a congenital predisposition to bronchiectasis since other congenital abnormalities such as idiocy and imbecility are often associated.

Partial bronchial obstruction, such as is found in a congenital stenosis or congenital web, results in a bronchiectasis of the respiratory tree distal to the point of obstruction. Jackson¹⁴ points out that these two congenital malformations may not be so rare a cause of chronic pulmonary suppuration as the paucity of literature regarding them would indicate.

In contradistinction to the rather rare forms of congenital bronchiectasis are the more common acquired forms. The latter may be divided, clinically, into acute and chronic.

Acute bronchiolectasis^{11, 15} is described as occurring in badly nourished, syphilitic, or rachitic children associated with acute bronchitis, measles, or pertussis. The condition is characterized by extensive bronchiolar dilatation which, in severe cases, gives the lung a honeycomb appearance. Clinically the child is pale, emaciated, the subject of bouts of fever, chronic cough, cyanosis, and clubbing of the fingers. The condition may terminate in a bronchopneumonia or may pass over into a condition of chronic bronchiectasis.

Chronic acquired bronchiectasis with specific etiology includes those cases in which the bronchiectatic condition is definitely secondary to some specific etiologic factor. This group would therefore include those cases of bronchiectasis which arise secondary to the production of a bronchial stenosis as in tuberculous or syphilitic cicatricial stricture, presence of a foreign body, or pressure of an aneurysm, neoplasm or en-

larged lymph glands. The frequent association of bronchiectasis and pulmonary tuberculosis, particularly of the chronic fibroid type, is widely recognized. Chevalier Jackson,^{14, 16} who has made the role of foreign bodies in the food and air passages particularly his own, emphasizes the importance of early investigation of the possible presence of a foreign body in all cases of chronic pulmonary suppuration. For a complete discussion of the relationship between foreign body and bronchiectasis the writings of McCrae¹⁷ and Jackson^{14, 16, 18} should be consulted.

Excluding all cases of bronchiectasis which have a congenital basis and those acquired forms which are secondary to some specific etiologic factor, there remains a large number of cases in which the etiology is more obscure. Numerically this group, the chronic acquired bronchiectasis with nonspecific etiology, equals or exceeds all the others combined. It includes not only the advanced cases with all the signs and symptoms of the textbook case of bronchiectasis, but early or mild cases with symptoms of a chronic bronchitis, which, prior to the diagnostic use of lipiodol, passed undetected. It is the etiologic factors of this group, sometimes referred to as primary bronchiectasis, which will now be discussed.

ETIOLOGY

The development of the acquired form of bronchiectasis depends upon the presence of two factors. The first is the presence of an infection which, in the course of the consequent inflammatory reaction, weakens or destroys the elasticity of the bronchial wall. The second is the action of a dilating force upon the infection-weakened bronchi. This force may act from within or the dilatation may be effected by traction upon the walls from without. Of these factors the first,

13. Duken, J.: *Klinische und Experimentelle Studien zur Pathogenese und Diagnostik der Bronchiektasie im Kindesalter*, Ztschr. f. Kinderheilk., 44: 1, 1927, quoted by Oshsner (footnote 7).

14. Jackson, Chevalier: Chronic nonspecific infections of the lung, *J. A. M. A.* 87: 729 (Sept. 4) 1926.

15. Sharkey, Seymour: Acute bronchiectasis, *St. Thomas Hosp. Rep.* 22: 33, 1892.; Stewart, H. H., and Biggart, J. H.: A case of acute bronchiolectasis, *Brit. M. J.* 1: 1115 (June 27) 1931.; Cecil, R. L.: *A Textbook of Medicine*, Ed. 2. Philadelphia, W. B. Saunders Co. 847, 1931.

16. Jackson, Chevalier: Suppurative disease of the lung due to inspired foreign body contrasted with those of other etiology, *Surg. Gynec. Obst.* 42: 305 (March) 1926.

17. McCrae, Thomas: Clinical features of foreign bodies in the bronchi, *Lumleian Lectures before the Royal College of Physicians of London*, *Lancet.* 1: 735 (April 12), 787 (April 19), 838 (April 26) 1924.

18. Jackson, Chevalier: Overlooked cases of foreign body in the air and food passages, *Brit. M. J.* 2: 686 (Oct. 7) 1925.; Arachidic and other forms of vegetable bronchitis, *Atlantic M. J.* 28: 506 (May) 1925.

that of infection, is undoubtedly of the greatest importance.

The onset of symptoms indicative of a bronchiectasis dates in a large proportion of cases to some previous acute respiratory infection. Of these, pertussis, influenza, measles and bronchopneumonia are most commonly cited. Laennec² in 1819 stated "that of all diseases whooping cough is perhaps more often than any other responsible for the organic lesion under discussion." Thus, in pertussis, the combination of a bronchial infection accompanied by long and violent fits of coughing has long been regarded as one of the most important predisposing causes of bronchiectasis.¹⁹ During the pandemic of influenza in 1918-1919 acute bronchiectasis, involving particularly the smaller bronchioles, was frequently found at autopsy.²⁰ Clinically²¹ and experimentally²² it is well known that infection of the respiratory tree by the influenza bacillus is a frequent cause of bronchial or bronchiolar dilatation. These facts, coupled with the higher incidence of bronchiectasis since that time, furnish the basis for the belief that, of the acute respiratory infections, influenza is one of the most important causes of this condition. Non-specific bronchopneumonia was found by Thorpe,²³ in a review of case records of children under thirteen years of age, as the most frequent antecedent of bronchiectasis. This is in agreement with the findings of

Boyd,²⁴ who, following the study of fifty-eight cases in children, concludes that "bronchopneumonia, usually in repeated attacks, would appear, therefore, to be responsible for the largest number of cases." The relationship between the acute respiratory diseases mentioned and bronchopneumonia is obvious.

The evidence that bronchiectasis frequently originates in some acute respiratory infection is too overwhelming to be disregarded. An acute ulcerative bronchitis, common to all acute respiratory infections, is believed by Erb²⁵ to be the essential lesion in the production of a subsequent bronchiectasis. Stokes in 1837²⁶ considered that the starting point of all cases of bronchiectasis was a bronchitis. That bronchiectasis constitutes the underlying pathology in a great many cases of chronic bronchitis is now recognized. This has been emphasized by Ochsner,²⁷ who states that "of all the various causes of bronchiectasis the one most frequently responsible for the condition is a chronic inflammatory process involving the bronchi, that is, chronic bronchitis." This statement is based upon his finding of a definite bronchial dilatation in over 90 per cent of a series of young university students suffering from chronic bronchitis or attacks of acute bronchitis, yet with no clinical evidence of bronchiectasis.

Studies on the bacterial flora^{23, 25, 28, 29, 30} of cases of bronchiectasis reveal a very mixed group of pyogenic organisms in the sputum and bronchial lesions. The prevalence of many types of organisms and the failure to find any one type, or particular

19. Lemon, W. S.: Bronchiectasis in childhood, M. Clin. N. Amer. 10: 531 (Nov.) 1926.

20. Opie, E. L., Freeman, A. W., Blake, F. G., Small, J. C., and Rivers, T. M.: Pneumonia following influenza, J. A. M. A. 72: 556 (Feb. 22) 1919.

21. Lord, F. T.: Boston M. & S. Dec. 18, 1902; *ibid.* May 11, 1905; *ibid.* May 18, 1905.; Boggs, T. R.: The influenza bacillus in bronchiectasis. Am. J. M. Sc. 139: 902 (Nov.) 1905.; Opie, E. L., Blake, F. G., Small, J. C., and Rivers, T. M.: Epidemic Respiratory Disease, St. Louis, C. V. Mosby Co., 1921.

22. Garvin, A. H., Lyall, H. W., and Morita, M.: Chronic nontuberculous lung infection. Am. Rev. Tuberc. 1: 16 (March) 1917.; Blake, F. G., and Cecil, R. L.: Nine studies on experimental pneumonia, J. Exper. Med. 32: 691 (Dec.) 1920.; Cecil, Russell L., and Blake, Francis G.: Pathology of experimental influenza and of Bacillus influenzae in monkeys, J. Exper. Med. 32: 719 (Dec.) 1920.

23. Thorpe, Edward S., Jr.: Chronic bronchiectasis in childhood, with observations on early diagnosis, Am. J. M. Sc. 177: 759 (June) 1929.

24. Boyd, Gladys: Bronchiectasis in children, Canad. M. A. J. 25: 174 (Aug.) 1931.

25. Erb, I. H.: Pathology of bronchiectasis, Arch. Path. 15: 357 (March) 1933.

26. Stokes, W.: Treatise on the Diagnosis and Treatment of Diseases of the Chest, Dublin, J. Falconer, 1837; quoted by Erb (footnote 25).

27. Ochsner, Alton: An unappreciated cause of chronic bronchitis, J. A. M. A. 93: 188 (July 20) 1929.

28. Ermatinger, L. M.: Microorganisms of lung abscess and bronchiectasis, J. Infect. Dis. 43: 391 (Nov.) 1928; Bucher, C. J.: The relation between the bacterial flora and tracheo-bronchial foreign bodies, J. A. M. A. 91: 633 (Sept. 1) 1928.

29. Greay, P. H.: Bacteriology of bronchiectasis, J. Infect. Dis. 50: 203 (March) 1932.

30. Kolmer, J. A.: Bronchial disinfection and immunization, Arch. Int. Med. 51: 346 (March) 1933.

group, in all cases of bronchiectasis, leads to the widely held conclusion that there is no specific bacterial factor in the production of this condition. Although Greey²⁹ and others^{23, 25, 28, 30} found streptococci most frequently, the former concludes his bacteriologic study of nine lobectomized lungs with this statement: "The variety of micro-organisms recovered suggests that no specific type plays an etiologic role, but that many bacteria are capable of producing bronchial damage sufficient to favor dilatation."

Smith,³¹ of Ray Brook, on the other hand, states that "the essential lesion in primary bronchiectasis is a focal necrosis of the elastic tissue in the bronchial wall due to infection with the fusospirochetal group of anaerobic organisms" and that "the fusospirochetal group of organisms is probably the cause of primary bronchiectasis." This group of organisms considered by Smith to be responsible for the bronchial damage, which is in some respects analogous to a syphilitic aneurysm, consists of spirochetes, fusiform bacilli, vibrios and cocci in symbiosis. In a large percentage of cases he has found them in the sputum and deep in the tissues of the bronchial walls. They are morphologically identical with the organisms found in pyorrhea alveolaris and Vincent's angina.³² Using a mixture of these organisms he was able to produce a foul necrotic abscess in the thigh muscles of guinea pigs, which was similar to an abscess produced by injections of the membrane from a Vincent's angina or of material from diseased teeth. Intratracheal injections of fusospirochetal material from these abscesses resulted in the development of a bronchiectasis in six rabbits of a series of thirty-two.^{31, 32}

Pulmonary infection with fusiform bacilli and spirochetes, morphologically identical with those of Vincent's angina, is widely recognized under the term fusospirochetal disease of the lung.³³ The etiologic relationship of these organisms to bronchiec-

tasis cannot, however, be regarded as proven. That fusospirochetal organisms associated with bronchiectasis are to be regarded more as chance secondary invaders than as specific etiologic factors is the conclusion of Van Allen,³⁴ Smith and Rusk,³⁵ Greey²⁹ and many others. The whole question of bacterial specificity in bronchiectasis is well summarized by Erb,²⁵ who states that: "the cause of bronchiectasis, whether primary or secondary cannot be attributed to any one organism or group of organisms, any more than can all cases of pneumonia and bronchitis be traced to a common cause." It must also be pointed out that bacterial investigations have been conducted in the main on chronic cases. The organisms thus recovered need give no indication of those primarily responsible as they may very well have been long overgrown by relatively non-pathogenic, secondary invaders. "The bacteriology, therefore, of bronchiectasis is not that of the chronic bronchiectatic lung, but of the bronchopneumonia or other acute respiratory disease which marked the onset of symptoms." (Erb).

The association of paranasal sinus disease with asthma, chronic bronchitis and

33. Bruce, H. W.: Case of Vincent's angina in which the larynx and trachea were involved, *Lancet* 2: 1021 (Oct. 2) 1907.; Rothwell, J. H.: Bronchial Vincent's angina, *J. A. M. A.* 54: 1867 (June 4) 1910.; Campbell, A. R., and Dyas, A. D.: Epidemic ulceromembranous stomatitis (Vincent's angina) affecting troops, *J. A. M. A.* 68: 1596 (June 2) 1917.; Greey, Horace: Vincent's angina infection: its prevalence, varied manifestations, treatment and bacteriology, *Am. J. M. Sc.* 155: 742 (May) 1918.; Gifford, S. R.: Fusiform bacilli of Vincent's angina, *J. Bact.* 5: 365 (July) 1920.; Pilot, Isadore, and Davis, D. J.: Fusiform bacilli and spirochetes; their role in pulmonary abscess, gangrene and bronchiectasis, *Arch. Int. Med.* 34: 313 (Sept.) 1924.; Jackson, Chevalier: Ulcerative bronchitis due to Vincent's organisms, *J. A. M. A.* 83: 1845 (Dec. 6) 1924.; Kline, B. S., and Berger, S. S.: Spirochetal pulmonary gangrene treated with arsphenamine, *J. A. M. A.* 85: 1452 (Nov. 7) 1925.; Wahl, H. R.: The pathology of some unusual pulmonary lesions, *South. M. J.* 19: 591 (Aug.) 1926.; Cahan, J. M.: Pneumonitis caused by Vincent's organisms, *M. J. and Rec.* 125: 194 (Feb. 2) 1927.

34. Van Allen, C. M.: Discussion on Smith, D. T.: Etiology of primary bronchiectasis, *Arch. Surg.* 21: 1185 (Dec.) 1930.

35. Smith, C. E., and Rusk, G. Y.: Pulmonary spirochetosis, *Am. J. Path.* 3: 225 (May) 1927.

31. Smith, D. T.: Etiology of primary bronchiectasis, *Arch. Surg.* 21: 1173 (Dec.) 1930.

32. Smith, D. T.: Relation of Vincent's angina to fusospirochetal disease of the lungs, *J. A. M. A.* 94: 23 (Jan. 4) 1930.; Fusospirochetal disease of the lungs produced with cultures from Vincent's angina, *J. Infect. Dis.* 46: 303 (April) 1930.

bronchiectasis³⁶ is so frequent as to suggest some etiologic rather than merely accidental relationship. In 1916 Rist³⁷ and Sergeant³⁸ drew attention to the association of chronic cough (bronchitis) and chronic sinusitis. When the sinusitis was cured the pulmonary symptoms disappeared. Mullin³⁹ considers that the bronchial dilatation so frequently associated with sinus infections arises as a result of infection and enlargement of bronchial, peribronchial, and mediastinal glands. Pressure of these enlarged glands on the bronchial walls produces a partial stenosis, thereby predisposing to infection and dilatation of the tube distal to that point. The infection may reach these glands by lymphatic absorption from the antrum, passing via the submaxillary and internal jugular nodes to the lymph ducts, the great veins, the heart and lungs.⁴⁰ Mullin⁴¹ considers the chronic hyperplastic type of sinusitis with thickened, soggy, infected mucosa and with deficient drainage through natural openings to be the most important type in causation of chronic chest infections. Childrey and Es-

sex⁴² on the other hand conclude from their experiments that the mucosa of the sinuses is highly resistant to absorption. Aspiration of material from infected sinuses is an alternative route of infection of the respiratory tree. The demonstration that inhalation of material from the nasal fossae may occur in sleep⁴³ and when awake⁴⁴ (experiment with rabbits) emphasizes the probable importance of this route. In conclusion it may be said that the association of bronchiectasis and sinusitis is too frequent to be considered merely as chance, but the extent to which sinusitis may be considered as directly responsible for bronchiectasis remains debatable. In agreement with Lemon¹⁹ it is better to regard "the diseases as fundamentally infectious and related, but not necessarily in ordered sequence."

Boyd⁴⁵ considers that the use of poison gas, particularly chlorine, during the World War led to the production of bronchiectasis in some cases. The gas causes softening of the bronchial wall, which, when associated with a chronic bronchitis over a period of years, gradually results in bronchial dilatation. In consequence of its slow development more cases are likely to be seen over the next decade.

Loss of the normal bactericidal properties of the secretions of the bronchial mucous glands as a result of some alteration in its character is believed by some to permit infection to occur.⁷

The second factor in the production of bronchial dilatation is the action of a mechanical force upon infection-weakened bronchial walls. Such a force may act upon the bronchial walls from within or by traction from without. Two theories, the inspiratory and the expiratory, are advanced in explanation of the source of the distensile force. The inspiratory theory, first ad-

36. Webb, G. B., and Gilbert, G. B.: Bronchiectasis and bronchitis associated with accessory sinus disease, *J. A. M. A.* 76: 714 (March 12) 1921.; Clerf, L. H.: Bronchiectasis associated with diseases of nasal accessory sinus; with bronchoscopic treatment of bronchiectasis. *Arch. Otolaryng.* 6: 28, 1927.; McLarnin, J. G.: Chest complications of sinus disease, *Ann. Otol. Rhin. & Laryng.* 41: 780 (Sept.) 1932.

37. Rist, E.: Les principes du diagnostic rationnel de la tuberculose pulmonaire, *Presse med.* 24: 305 (July 13) 1916.; Le diagnostic differential de la tuberculose pulmonaire et les affections chroniques des fosses nasales, *Press. med.* 24: 321 (July 24) 1916.; quoted by Webb and Gilbert (footnote 36).

38. Sergeant, E.: Histoire suggestive de quelques faux tuberculeux, diagnostic de la tuberculose pulmonaire et ces affections des foies respiratoires supérieures, *Bull. et mem. Soc. med. d. hop. de Paris*, July 28, 1916.; *Journal statistique d'un centre de triage, J. de med. et de chir. prat.*, Sept 10, 1918; quoted by Webb and Gilbert (footnote 36).

39. Mullin, W. V.: A review of sinus-chest infections, *Ann. Otol. Rhin. & Laryng.* 41: 494 (Sept.) 1932.

40. Mullin, W. V.: The lymph drainage of the accessory nasal sinuses, *Tr. Am. Laryng. Rhin. and Otol. Soc.* 1919.

41. Mullin, W. V.: The relation of paranasal sinus infection to disease of the lower respiratory tract, *J. A. M. A.* 87: 739 (Sept. 4) 1926.

42. Childrey, John H., and Essex, Hiram: Absorption from the mucosa of the frontal sinus, *Arch. Otol.* 14: 564 (Nov.) 1931.

43. Quinn, Lester H., and Meyer, O.: The relationship of sinusitis and bronchiectasis, *Arch. Otolaryng.* 10: 152 (Aug.) 1929.

44. Mullin, W. V., and Ryder, C.: Experimental lesions of the lungs produced by the inhalation of fluid from the nose and throat, *Am. Rev. of Tuberc.* 4: 638 (Nov.) 1920.

45. Boyd, William: *Pathology of Internal Diseases*, Ed. 1, Philadelphia, Lea & Febiger, 187, 1931.

vanced by Laennec, holds that the dilating force is provided by powerful inspiratory efforts when accompanied by partial obstruction of the bronchi. The partial obstruction may consist of a swollen mucous membrane, a collection of tenacious mucus, foreign body, or other factor which permits the inflow of air but retards its outflow. The result is an increasing residuum of air in the affected bronchi which on each subsequent respiratory effort exerts a distensile force upon the bronchial wall.

The expiratory theory, first propounded by Mendelssohn⁴⁶ and later amplified by Jenner,⁴⁷ considers that the raised intrabronchial pressure in explosive cough occurring just prior to opening of the glottis constitutes the distensile force. The plausible explanation thus offered has had many adherents. That such an explanation is however highly problematical is pointed out by MacCallum⁴⁸ and Boyd.⁴⁵ Hedblom¹⁰ states the adverse position admirably as follows: "It is true that the intrabronchial pressure is raised but the force which brings it about is applied to the outside of the lung and bronchi by the chest wall and abdominal muscles forcing the diaphragm upward. The pressure inside and outside the bronchial wall is therefore the same and there is no dilating effect."

Erb,²⁵ however, points out that, if the development of bronchiectasis is followed closely from the initial lesion to its chronic end stages, inspiratory or expiratory distensile forces are unnecessary to explain the characteristic bronchial enlargement. He considers that the destruction and actual loss of bronchial tissue in the initial lesion is responsible for the increased diameter of the bronchial lumen. It is by this means that the bronchial enlargement so frequently found associated with pulmonary abscess, gangrene or suppuration of the lung is effected. With replacement of destructive forces by reparative processes rapid epithelial proliferation relines the enlarged air passages. These, when observed

in the chronic cases, are then subject to the misinterpretation of having arisen as the end effect of the action of a distensile force upon weakened bronchial walls. The search for such a distensile force has resulted in the postulation of the inspiratory and expiratory theories of dilatation discussed above. In support of his view, Erb quotes McNeil⁴⁹ as follows: "A bronchiectatic cavity is not a dilated bronchus, but an excavation in the lung substance, starting in a bronchus . . . It is not necessary in order to explain the existence of the cavities to postulate the operation of any of the factors usually credited with dilating effects. Destruction of tissue and not dilatation is the essence of the process. Nevertheless, those factors may be instrumental in enlarging the cavities after they are formed."

The view that bronchial dilatation may also arise by traction upon the walls from without was first advanced by Corrigan.⁵⁰ He considered that in unresolved pneumonia, syphilis, and chronic bronchitis, the contraction of fibrous tissue between the bronchi pulls upon them from all sides with a force sufficient to produce dilatation. Boyd⁴⁵ considers this to be the explanation for the frequency with which bronchiectasis is associated with chronic fibroid tuberculosis. An extensive pulmonary fibrosis accompanies all cases of chronic bronchiectasis. The widely held conception of its etiologic relationship to bronchial dilatation is well expressed by Findlay and Graham,⁵¹ who conclude their discussion of the etiology of bronchiectasis with the following paragraph: "To our mind the only feasible explanation of the condition is the fibrosis of the lung, as first suggested by Corrigan, with the added influence of pleural adhesions, as first pointed out by Hamilton, since without doubt by providing a fixed point for the contracting fibrous tissue these adhesions increase the traction force

46. Mendelssohn, A.: *Der mechanismus der respiration und circulation*, Berlin, 1845; quoted by McGillicuddy (footnote 11).

47. Jenner, William: *Med. Chir. Tr.*, 11: 25, 1857; quoted by McGillicuddy (footnote 11).

48. MacCallum, W. G.: *A Textbook of Pathology*, Ed. 4. Philadelphia. W. B. Saunders Co., 411, 1928.

49. McNeil, C., Macgregor, A. R., and Alexander, W. A.: *Studies of pneumonia in childhood; bronchiectasis and fibrosis of lung*, *Arch. Dis. Childhood* 4: 170 (Aug.) 1929.; McNeil, C.: *Bronchiectasis*, *Brit. M. J.* 2: 229 (Aug. 6) 1932.

50. Corrigan, D. J.: *Dublin M. J.* 12: 270, 1838.

51. Findlay, L., and Graham, S.: *Bronchiectasis in childhood*, *Arch. Dis. Childhood* 2: 71 (April) 1927.

of the intrapulmonary fibrosis." The question, since fibrosis followed by contraction undoubtedly does occur, is, however, this: Does such fibrous tissue contraction necessarily result in bronchial dilatation? Many authors since the time of Corrigan firmly believe with Findlay and Graham⁵¹ that it does. Erb²⁵ and McNeil,⁴⁹ on the contrary, believe that it does not. Erb's studies of a series of cases whose duration prior to death or operation ranged from ten days to five and one-half years showed extensive bronchial dilatation in all, yet pulmonary or pleural fibrosis was demonstrable only in those of long duration. His conclusion is "that bronchial dilatation can and does take place long before the fibroid lung contracts, and the dilatation is, therefore, quite independent of such contraction."

MORBID ANATOMY

Textbook discussions of the pathologic lesions of bronchiectasis are confined almost entirely to those of chronic bronchiectasis. They thus represent the end stages in a condition which is considered, in the majority of cases, to have had its origin in an acute inflammatory process. Thus, as Erb²⁵ points out, "two main stages in the course of the condition may be recognized: (1) the stage of damage or destruction; (2) the stage of repair." Bronchiectasis is thus a progressive condition, the rapidity of its course, the balance between destructive and reparative processes and the resultant morphological tissue changes depending upon the interplay of a variety of etiological factors.

The earliest lesion, which characterizes the stage of damage or destruction, resembles that seen in bronchopneumonia. The bronchi, particularly the small bronchioles, form the center of an acute inflammatory process. The lumina are filled with a purulent exudate. The bronchial walls are infiltrated with inflammatory cells and show varying degrees of destruction depending largely upon the type and virulence of the infecting organisms. The destruction may vary from partial loss of epithelial lining to extensive ulceration and necrosis of the elastic tissue fibres, muscle tissue and cartilaginous plates deep in the bronchial walls. Destruction of the elastic, muscle and cartilaginous components is important since

the elasticity and strength of the bronchial wall is dependent upon their anatomic and functional integrity.⁵² The degree of dilatation will, then, in the early stages largely depend upon the extent to which the bronchial wall is destroyed. In some cases portions of an entire bronchus and varying amounts of adjacent pulmonary parenchyma may be involved in the destructive process. Such a cavity when relined by regenerated epithelium gives rise to the saccululation frequently seen in the chronic case of bronchiectasis. Varying amounts of pulmonary parenchyma adjacent to, or subserved by the affected bronchi will show varying degrees of atelectasis and pneumonic involvement.

With subsidence of the initial acute infection reparative, rather than destructive, changes predominate. This constitutes the stage of repair. When the entire bronchial wall has been destroyed and bronchial enlargement thus produced no regeneration of the elastic, muscle or cartilaginous elements occurs. The bronchial dilatation is thus permanent. Granulation tissue and ultimately fibrous tissue replaces the destroyed tissues of the bronchial wall. Polypoid masses of highly vascular granulation tissue covered with the rapidly regenerated epithelium may project into the lumen. Experimental evidence that epithelial regeneration occurs following necrosis of the entire bronchial wall without associated regeneration of the other components has recently been furnished by Adams and Livingstone.⁵³ They found that the subsequent rapid epithelial regeneration not infrequently gave rise to polyp and inclusion-cyst formation. In this manner the hypertrophic, reddened mucous membrane with highly vascular papillomatous masses mentioned in textbooks as characteristic of the early stages is produced. Contraction and devascularization of the granulation tissue result in the pale, smooth, atrophic mucous membrane characteristic of the late stages of bronchiectasis. The reparative changes consist, essentially, in the complete epithelialization of denuded surfaces, fibrous tis-

52. Macklin, C. C.: Functional aspects of bronchial muscle and elastic tissue, *Arch. Surg.* 19: 1212 (Dec.) 1929.

53. Adams, W. E., and Livingstone, H. M.: Closing the bronchial stump in pulmonary surgery, *Ann. Surg.* 95: 106 (Jan.) 1932.

sue replacement of destroyed bronchial tissue and gradually progressive connective tissue proliferation radiating from the damaged bronchial tubes into the surrounding pulmonary parenchyma.

Bronchiectasis is therefore in the late stages characterized anatomically by a diffuse (fusiform or cylindrical) or localized (saccular) dilatation of bronchi. Of these the former is the most common. The bronchial dilatation may be confined to one main bronchus or to one or more lobes. Bronchiectasis is most frequently bilateral and chiefly involves the lower lobes. The more frequent involvement of the lower lobes is explainable on the basis of inadequate drainage with stasis of the retained secretions. Bronchiectasis of the upper lobes alone is almost invariably tuberculous. Bronchiectasis is found more frequently in the left lower lobe than in the right—a finding for which no adequate explanation has as yet been given.

Chronic bronchiectasis is characterized by pathologic conditions in organs other than the lungs. The chronicity of the infection and the progressive functional incapacity of the affected bronchi results in the development of a diffuse fibrosis and areas of atelectasis in neighbouring lung tissue. This results in the functional loss of large portions of lung tissue and the obliteration or partial obstruction of large portions of its vascular bed. Interference with the proper oxygenation of the blood and the development of an increased resistance in the lesser circulation are thereby produced. The right heart is as a consequence forced to hypertrophy. Eventually its compensatory efforts prove insufficient; general venous congestion appears and with it the signs and symptoms of pulmonary osteoarthropathy. Thus, clubbing of the fingers and toes, incurvature of the nails and arthritic conditions are frequently seen in longstanding cases of bronchiectasis. Amyloid degeneration of various organs is frequently associated. Brain abscess⁵⁴ is recognized as a not infrequent complication of bronchiectasis.

54. Mullin, W. V.: The accessory sinuses as an etiologic factor in bronchiectasis. *Ann. Otol. Rhin. & Laryng.* 30: 683 (Sept.) 1921. Mullin raises the question as to whether in many cases the brain abscess may not originate from an unrecognized sinusitis rather than from the diseased lungs.

SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT OF BRONCHIECTASIS*

By
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The word bronchiectasis means dilatation of the bronchi. It is applied to a disease in which there is dilatation with varying degrees of inflammation and sputum formation. The disease was long considered rather uncommon. I was interested in this sentence in a *System of Medicine* by Osler & McCrae,¹ published in 1914: "Paroxysmal cough and copious purulent sputum, often offensive, are the chief symptoms of bronchiectasis and without which the diagnosis is not possible." In more recent years, largely through the use of iodized oil, we have been able to recognize many more cases, especially those with lesser degrees of dilatation.

My chief concern in presenting this paper is to call attention to the frequency with which bronchiectasis is diagnosed tuberculosis. It usually falls the lot of the unfortunate individual who has a chronic productive cough, especially if he spits blood, to have his neighbors very soon whisper that he has consumption, gradually his family begins to fear and sometimes his doctor sends him West to be cured of tuberculosis, when he suffers from bronchiectasis. I feel very strongly the responsibility to make a correct diagnosis in such cases. The stigma attached to the diagnosis of tuberculosis, which is plainly the outcome of ignorance and our medieval outlook on the disease, is none the less powerful. I feel that you do a non-tuberculous individual a great harm to tell him he has tuberculosis and subject him to his own fears and depressions, his family's hopeless pity and the polite avoidance of his neighbors. On the other hand realizing the prevalence of tuberculosis, I have made it a practice to try to rule it out before making the diagnosis of bronchiectasis in any case.

The symptomatology of bronchiectasis varies. Cough is certainly the most prominent feature. Paroxysmal cough, initiated

*Concluding part of a symposium on bronchiectasis, presented to the Association in annual session, Birmingham, April 17, 1934.

1. Osler, William and McCrae. Thomas: *Modern Medicine*, Philadelphia, Lea & Febiger 2: 915, 1913.

by a change in position so that pus runs from diseased into healthy bronchi, is common. This cough usually appears at night when the patient lies down and when he gets up in the morning. The cough is usually productive. In advanced cases the amount of sputum may be very large, sometimes over 20 oz., daily. The sputum sometimes settles in the characteristic three layers. The sputum may have a foul, fetid odor. I have noted a dry, tenacious sputum that is coughed up by my cases who complain of asthma. Blood spitting is fairly common in bronchiectasis. Several authors describe a dry type of bronchiectasis in which there is a dry non-productive cough, and blood spitting is common.^{2, 3} I have seen only one case of this type.

Fever and sweats occur and depend upon the amount of associated pneumonitis. Most of my patients complained of repeated "colds" in the winter that would "hang on." During the time of the "cold" they would cough up large amounts of yellow purulent sputum, the physical signs in the affected lung would be increased and I have been able to demonstrate infiltration in the lung on the x-ray film. Whether you call this a pneumonitis or a chronic bronchopneumonia⁴ is to me purely an academic question. They usually ran a low grade fever and sometimes had sweats. These patients were uniformly better in the summer and worse in the winter.

Several of my patients have complained of dyspnea which they called asthma. In some the paroxysmal character of the attack suggested a true allergic phenomenon while in others I was of the opinion that the dyspnea was due to mechanical obstruction by the tenacious sputum described above and by exhaustion caused by the paroxysms of coughing. Asthma caused by sensitivity to certain infecting organisms is well recognized.^{4, 5} This is a possible explana-

tion for asthma in these cases. In combating the *bete noir*, asthma, I feel that vigorous efforts to clear up these infections offer some hope to the physician who has become discouraged with scratches on the arm, directions for the removal of all dust including house dust, and the abstinence from practically all foods necessary to life.

The physical signs of bronchiectasis are also varied. Typically, bronchiectasis is a disease of the lower lobes. There may be practically no physical signs in the chest, although as a rule certain signs are present. If the disease is unilateral you can usually demonstrate diminished expansion on the affected side. The affected side is usually duller on percussion but I have frequently found a rather high pitched hyperresonant note with little air set in vibration. On auscultation you are apt to hear rales of every description. I have found a coarse bubbling or sticky rale, with occasional whistling rales, most common, suggesting obstruction of the bronchi. Clubbing of the fingers is common.⁶

In making a diagnosis of bronchiectasis several conditions must be excluded. The sudden and acute onset of lung abscess along with good x-ray plates usually serve to differentiate it from bronchiectasis. Careful examination and culture of the sputum help in ruling out mycotic infections. Bronchoscopic examination and x-ray plates are necessary in carcinoma. It is the differential diagnosis between bronchiectasis and pulmonary tuberculosis that still offers a challenge. In a day when the diagnosis of chest conditions has resolved largely to an x-ray plate made with varying technical skill and interpreted with varying experience this challenge must be met by the clinician who is able and willing to make a careful examination of the patient and weigh all of the information obtainable. There are several helpful points to consider:

First: The history. Contact is an all important factor in the development of tuberculosis and the history of exposure should carry great weight in making the diagnosis. It is true that second infection tuberculosis may be endogenous in origin but the first infection is necessarily exogenous

2. Funk, E. H.: Pulmonary abscess, bronchiectasis, pulmonary neoplasms; clinical aspects, *Radiology* 20: 353-360, May '33.

3. Norris and Landis: *Diseases of the Chest and the Principles of Physical Diagnosis*, Philadelphia, W. B. Saunders Co., pp. 327 and 361, 1931.

4. Reisman, David: Chronic nontuberculous bronchopneumonia, *J. A. M. A.* 102: 673, March 3, '34.

5. Cooke, R. A.: Infective asthma; indications of its allergic nature, *Am. J. M. Sc.* 183: 309-317, March '32.

6. Ballou, H., Singer, J. J., and Graham, E. A.: Bronchiectasis, *J. Thoracic Surg.* 1: 296, Feb. '32.

and a careful inquiry frequently uncovers the source of infection. Dr. Blair has outlined the factors leading to the development of bronchiectasis.

Second: The location of the lesions. Tuberculosis is typically a lesion of the upper

trated and examined for tubercle bacilli. If this is negative I consider the burden of proof shifted to the diagnosis of tuberculosis.

Fourth: Examination of the bronchi with the bronchoscope is of value.⁸ Fre-

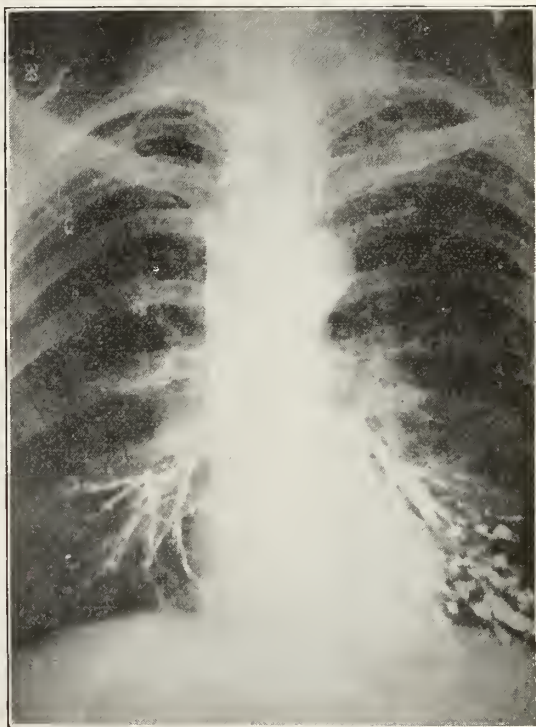


CASE 1

W. R. P.—W. M. Age 36. Iodized oil. Normal bronchi after injection.

lobes. In the adult primary tuberculosis of the lower lobes is extremely rare.³ Bronchiectasis is typically a disease of the lower lobes. Bronchiectasis of the upper lobes does occur, however; usually following an old healed tuberculosis.⁷

Third: Examination of the sputum. In most instances a careful examination of the sputum in a case of active tuberculosis will show tubercle bacilli. We are all familiar however, with cases that we feel certain have tuberculosis but the sputum remains negative. It has been my practice to require six sputum examinations. If these are all negative I have the patient collect a 48-hour specimen. A culture for yeast is made from this and the remainder concen-



CASE 2.

E. S. S.—W. M. Age 55. Has had cough since he was a baby. Was told that he aspirated a pea into his lung when he was a baby. Had high fever and cough after aspirating pea. Has had asthma for years. Became morphine addict because of asthma. Has had small hemorrhages. Has been told that he had tuberculosis. All specimens of sputum negative for tubercle bacilli.

quently pus can be aspirated from the affected bronchi. In those cases where bronchiectasis is secondary to some obstruction it is extremely valuable. The obstruction can be localized, sometimes removed and biopsies taken. The bronchoscope is also a valuable instrument for the introduction of iodized oil.

Fifth: X-ray examination is extremely valuable.⁹ Shadows extending down

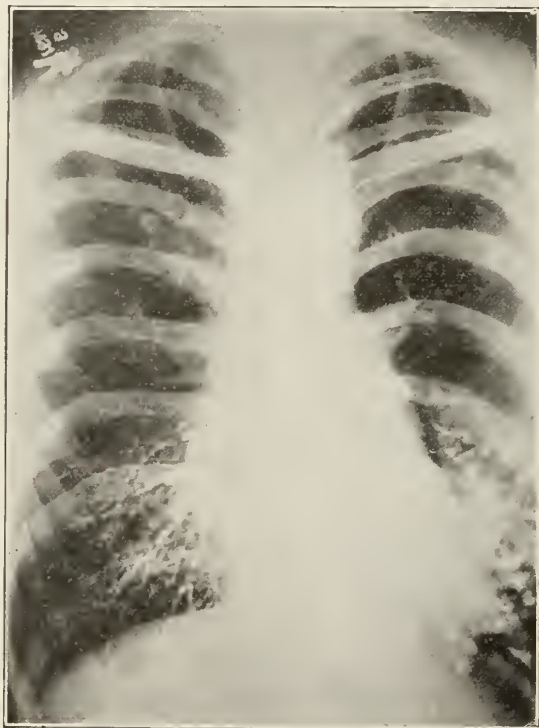
8. Clerf, L. H.: Pulmonary abscess, bronchiectasis, and pulmonary neoplasms; bronchoscopic aspects, *Radiology* 20: 365-367, May '33.

9. Farrell, J. T., Jr.: Pulmonary abscess, bronchiectasis, and pulmonary neoplasms; roentgenologic aspect, *Radiology* 20: 360-365, May '33.

7. Rubin, E. H., and Newman, H. S.: Upper lobe bronchiectasis, *Am. J. M. Sc.* 186: 650-659, Nov. '33.

from the hilum are suggestive. Conclusive evidence is best obtained by instilling into the bronchi iodized oil as a contrast medium. I have found no difficulty in instilling the oil into the bronchi by simply cocaineizing the anterior pillars of the fauces to abol-

mothorax or thoracoplasty.¹⁰ Unfortunately the brilliant results secured in pulmonary tuberculosis by these methods of collapse have not been duplicated in bronchiectasis. Frequently the result is harmful.^{11, 12, 13, 14}



CASE 3.

G. T.—W. M. Age 28.

Onset of cough at age of 2. Had acute bronchitis when a baby. Has had frequently recurring "colcs." Has coughed up streaks of blood.

Physical signs limited to lower left chest. Sputum negative for tubercle bacilli. Concentrated 48-hour specimen of sputum negative. Sputum culture negative.

Iodized oil in the bronchi shows a definite bronchiectasis.

ish the swallowing reflex and dropping the oil on the back of the tongue. I have seen no ill effects from its use. The oil can be instilled by means of an intra-tracheal catheter or in cases where you want it in a particular portion of the lung by means of the bronchoscope. The oil shows very beautifully the dilated bronchi.

Briefly the treatment of bronchiectasis might be outlined as:

First: Collapse of the affected lung tissue either by phrenic nerve resection, pneu-



CASE 4.

M. G.—W. F. Age 40.

Productive cough since age of 2. Followed whooping cough. Has had several large hemorrhages. Has been diagnosed tuberculous. All specimens of sputum negative for tubercle bacilli. Concentrated 48-hour specimen of sputum and culture negative. Mantoux test negative.

Iodized oil shows a definite bilateral bronchiectasis.

10. Hedblom, C. A.: Pathogenesis, diagnosis, and treatment of bronchiectasis, *Surg., Gynec. & Obst.* 52: 406-417, Feb. (No. 2A) '31.

11. Flick, J. B.: Pulmonary abscess, bronchiectasis, and pulmonary neoplasms; surgical aspects, *Radiology* 20: 367-372, May '33.

12. Editorial: Surgery of the Lung, *Lancet* 225: 1268 (December) 1933.

13. Whittemore, W.: Treatment of chronic broncho-pulmonary suppurative lesions limited to one lobe of lung, *New England J. Med.* 199: 1213-1216, Dec. 13, '28.

14. Jackson, C., and Jackson, C. L.: Peroral pulmonary drainage; natural and therapeutic, with especial reference to "tussive squeeze," *Am. J. M. Sc.* 186: 849-854, Dec. '33.

Second: Removal of the affected lung tissue by lobectomy. This procedure is limited to unilateral cases and offers the only hope for complete cure in advanced cases.¹³ The high mortality attending the operation discourages its use.



CASE 5

M. H.—W. F. Age 35.

Chronic productive cough following influenza 1½ years ago. Physical signs limited to left lower chest. Iodized oil shows moderate dilatation of bronchi (note below diaphragm). Apparent cure under postural drainage.

Third: Drainage of the affected lung, while not curative, certainly gives great relief and symptomatic improvement. Bronchoscopic drainage followed by the instillation of an antiseptic oil gives great relief.^{8, 14} I had the good fortune to work in the Chevalier Jackson Clinic and see the ease with which one operator treats 20 to 30 cases in a morning with good results. In the cases I have treated I have used simple postural drainage. The patient is advised to get a cot and elevate the foot 30 inches higher than the head. The patient then lies on the cot with his head down for one-half hour two or three times a day. He is ad-

vised to turn from side to side until he finds the position where he drains best. In the summer I advise the patient to place the cot in the sun and strip to the waist during the drainage. I believe this is beneficial.

Fourth: Dr. Alton Ochsner¹⁵ has reported brilliant results by the repeated instillation of iodized oil, using the same technique as was described in the diagnostic procedure. So far, I have not reached a conclusion as to my results from this procedure.

Fifth: The patient's general health should be built up. Good food, rich in vitamins, sun light and the avoidance of exposure all help. Where there is infection of the upper respiratory tract, paranasal sinuses, tonsils, teeth, etc., every effort should be made to clear it up. When spirochetes are found in the sputum arsenicals are sometimes given.

SUMMARY

1. Bronchiectasis is more common than is supposed and is frequently diagnosed tuberculosis.

2. Patients with bronchiectasis frequently complain of "asthma." Efforts to control the infection in the bronchi has given considerable relief to these patients.

3. The differential diagnosis between bronchiectasis and tuberculosis is sometimes difficult and requires a careful study and examination of the patient.

4. The treatment of bronchiectasis follows several different lines. In selected cases, surgical procedures sometimes effect a complete cure. Medical procedures, such as the use of iodized oil, postural drainage, and the eradication of upper respiratory infections, give relief and symptomatic improvement.

Childhood Tuberculosis.—An x-ray plate should always be made when the tuberculin test is positive, or when tuberculosis is suspected, even though the test is negative. In fact we believe that no child in ill health from an undetermined cause should be told that he does not have tuberculosis until a roentgen study has been made.

The interpretation of roentgenograms in suspected cases of childhood tuberculosis is always interesting and at times quite difficult. The initial pulmonary infection in children is usually located peripherally and for this reason may be obscured in the x-ray plate by the shadows of ribs or diaphragm.—Norris, *Texas State J. Med.*, Oct. '34.

15. Ochsner, A.: Diagnosis and treatment of bronchiectasis, *South. M. J.* 25: 149-151, Feb. '32.

IRRADIATION FOR INFLAMMATORY
CONDITIONS*

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The value of radiotherapy in the treatment of many acute, subacute and chronic inflammatory processes is not as well known as it deserves to be. Several factors may be given as reasons for the apathy with which it has been accepted. The sound experimental bases and the mass of clinical and other evidences have not been properly considered and many questionable ideas have been offered as explanations.

Improper dosage, usually in the form of too large a dose, has been the reason for most failures to cure. This fact is responsible for the idea that prevailed a few years ago that x-ray therapy was contraindicated when inflammation was present. The first knowledge of the value of irradiation in inflammatory conditions resulted from the observation of the unexpected benefit derived from exposure for diagnostic purposes.

As far back as 1902 Mayou recorded 16 cases of trachoma which were treated with roentgen rays. In the first case the left eye alone was irradiated and completely cured. The right eye was treated with copper sulphate solution and it showed much less improvement over the same period of time; however, subsequent exposure to x-rays cured this eye also. Five of the remaining 15 cases were completely and permanently cured; the condition was improved favorably in 9 and the remaining one was still under treatment. His experience was confirmed by Stephenson and Walsh, Lane, Sabbadini and many others. Some of the cases reported cured had recurrences, but many remained free from the disease. The recurrent cases responded to further treatment. This would lead us to believe that the initial treatment was either not thorough or had not been continued long enough.

Irradiation causes the lymphoid tissue to retrogress and the granulations to disappear. This action is greatest in the early stages of the granular form. It has little

or no effect after the granulations have been replaced by fibrous tissue. Radium has the same effect as x-rays, but the dosage is harder to distribute equally and uniformly.

Carbuncles, furuncles and other pyogenic infections are favorably influenced by irradiation. This is especially true when treated during the stage of the greatest leukocytic infiltration which is the stage before frank suppuration. Dating from the reports of Coyle in 1906 to Pordes in 1929 this has been demonstrated by many men.

Even with such favorable evidence this method of treatment is not used as widely as its merits warrant. This, no doubt, is because its value is not generally realized. A review of all publicized reports shows that the majority of patients are remarkably and promptly relieved. Occasionally in a small percentage of cases the pain is more excessive for the first hour or two, but this is not true in the majority of cases. In this small percentage of cases the pain begins to abate within an hour and is usually entirely relieved in from 24 to 36 hours. The subsequent course and behavior of the inflammatory process is cut short and many cases never reach the supplicative stage. The advantages of the treatment are that it is most effective in early stages where in other methods are least effective or contraindicated; it is inexpensive and does not interfere with the activities of the patient; it does not require hospitalization; it usually relieves pain within a few hours; it makes hot applications and other dressings unnecessary or shortens the period during which they must be applied; it often eliminates the necessity of an operation; it is painless during administration; it gives better cosmetic results and lessens mortality.

Irradiation is administered in small doses and ordinarily one dose is sufficient. Those cases that do not respond promptly may require a second or third dose with a few days interval between. The dosage is so small there can be no question of cutaneous or systemic reactions. Consequently, there are no contraindications and it can be administered to the weak and febrile patients without danger or fear. Irradiation during the supplicative stage is less effective, but even then it usually relieves pain

*Read at a meeting of the Morgan County Medical Society, Decatur, April 5, 1934.

and shortens the course. It is not my intention to leave the impression that all lesions respond with the same degree of uniformity. The percentage, however, is small in the cases that do not yield at all. No material loss of time has elapsed in the cases that do not yield and one may still resort to local application or surgery.

Other inflammatory lesions in which excellent results have been obtained are cellulitis, soft tissue abscesses, paranephric and perinephric abscesses, peridental infections, acute adenitis, onychia and paronychia, orchitis, epididymitis, mastitis, suppurative frontal and maxillary sinusitis, mastoiditis, otitis media and osteomyelitis.

Heidenhain reports 855 cases as above classified and 76% of these recovered rapidly without surgical intervention. Doubtful results were obtained in 19%. The fact that most of these patients recovered without operation does not mean that irradiation should supplant surgical measures. Collaboration on the part of the surgeon and radiologist is essential. It may be necessary and wise in many cases, irrespective of effective irradiation, to incise and drain residual pockets of pus. The surgeon should observe more closely the cases where the inflammatory process has been shortened by irradiation because more prompt intervention may be necessary. The results of Heidenhain have been substantiated by many others and Holzknecht advises the surgeon not to operate before irradiation and not to be influenced by lymphangitis or septicemia.

Few physicians are familiar with the value of irradiation in connection with pneumonia and especially the delayed resolution type. In 1905 Musser and Edsall reported a case of delayed resolution in which the use of irradiation was followed by rapid resolution and improvement. In 1906 Edsall and Pemberton described three more cases in which moderate irradiation of the lungs was followed by rapid resolution and subsidence of clinical manifestations. They were of the opinion that the treatment was useless after organization and they considered active continued inflammation with fever, toxemia and tuberculosis as contraindications. A. J. and W. A. Quimby in 1916 confirmed these experiences in twelve cases of delayed resolution and they were

so favorably impressed with irradiation that they made the statement that "no pathological process in the body responds quicker to x-ray exposure than non-resolution following pneumonia." Many other favorable reports of the influence of roentgen rays on delayed resolution as well as on the earlier phases of pneumonic processes have been made by Crost in 1925, Torrey in 1927, Holtz in 1929 and Merritt and McPeak in 1930. These men have used and report good results with irradiation in post-operative pneumonias as well as in pneumonias unrelated to surgery.

Erysipelas is another condition, when not complicated with diabetes or nephritis, that responds to radiotherapy. This is particularly true if the patients are adults and treated early.

Acute parotitis is an uncommon, but provoking, complication of certain surgical operations. Its occurrence is particularly high in surgery of the large intestine. Heidenhain in 1926 seems to have been the first to report the influence of irradiation on this disease. A moderate dose of radium applied in the infiltrated stage causes the inflammation to subside in from 24 to 48 hours. The original mortality which ranged from 35% to 60% has been greatly reduced and suppuration is only 1/10 as common as it was after other modes of treatment. Roentgen rays have given equally as good results, but radium is easier to use and disturbs the patient less.

In view of the fact that the infiltrated stage of chronic parenchymatous nephritis is characterized by round cell infiltration around the glomeruli and large intertubular vessels, Pescarolo and Quandrone in 1907 treated a woman with nephritis. This condition was accompanied by edema of the lower extremities and trunk, ascites and hydrothorax. The condition of the patient began to improve immediately and complete recovery followed. Several other workers have reported good results, but here it is my belief that results depend on the stage of the disease and the infiltration.

Since it will be impossible to enumerate and describe all of the inflammatory conditions in which good results have been obtained through the use of irradiation, I will mention briefly the following miscellaneous group:

Pordes in 1926 treated many patients with inflammation of the dental periosteum. The more acute the process the better the results.

In 1926 Wagner reported the results of irradiation in 350 cases of acute, subacute and chronic inflammatory conditions of the female genital structures. Exceptionally good results were obtained in practically all cases of the puerperal form of parametritis and gonorrheal infection. In 8% of his cases, most of which were quite old, no benefits were obtained. A temporary exacerbation of symptoms occurred in 10%.

Gamborow reported 123 cases of inflammation of adnexa which were treated with extremely good results.

Radiotherapy has and is being used successfully in actinomycosis, blastomycosis, anthrax and other conditions that I will not mention at this time.

Evidence of the therapeutic value of irradiation in inflammatory conditions is so overwhelming and so abundant it is inconceivable that it is not used more extensively. The lack of utilization is most probably due to skepticism. This, no doubt, has been brought about by its recommendation for such a great number of inflammatory lesions. Fear of reactions or accidents which have occurred in treating malignancies with large dosage may be another factor.

TECHNIC

Although many roentgenologists vary in dosage they all recommend from a small to a moderate dose. As a comparison we will say that a dose of x-ray which will produce a redness is 100% and in an inflammatory lesion only from 10% to 50% of this dosage is used. Consequently, since only from one to three treatments are given it would be impossible to get either a local or systemic reaction.

MODE OF ACTION

Various explanations have been advanced to account for the action of irradiation and this fact alone may be responsible for the skepticism with which the treatment has been accepted. Many physicians have found it difficult to believe that the same agent can be so effective in so many inflammatory conditions in the various organs of the body. There is a tendency on the part of some to regard it as having bacterial qualities, but

experimentally this is fairly well disproved. Heinke in 1903 and 1905 reported results of a large number of experiments on white mice, rats, guinea pigs, rabbits and dogs. These experiments revealed that lymphocytes were very susceptible to radium and x-rays. They showed that exposure in large doses caused death of the animal, but at autopsy he found that the spleen, mesenteric glands and intestinal lymph follicles showed a decrease in lymphocytes and a cellular disintegration that varied in degree according to dosage and the intervals between administrations. The destruction was found to begin about 2 hours after treatment and it was almost complete in 24 hours. There was thus a reduction in the size of the structures involved. The clumps or ball of disintegrated chromatin were taken up by the reticular cells and they assumed a phagocytic action. The phagocytic action on the degenerate nuclear chromatin continued until the lymphocytes in the follicles were largely destroyed. A small percentage of these cells appeared to resist the action of the x-rays. After a number of hours the phagocytic reticular cells began to disappear; the chromatin debris ingested by the phagocytes appeared to undergo intracellular digestion because the number and size of the ingested fragments diminished steadily. All that remained after the phagocytes disappeared were connective tissue, blood vessels and a few round cells. Two or three days after exposure to roentgen rays degeneration of other cells became perceptible. This was noted in the polymorphonuclear leucocytes and eosinophiles even in the spleen and bone marrow. The degree of degeneration of lymphocytes was in proportion to the length of exposure, skin focal distance and thickness of intervening tissue. Other animals irradiated over varying periods were examined 2 or 3 weeks later and it was shown that regeneration was taking place in the lymphoid tissue.

Warthin's description of the effect of irradiation agrees with Heinke in every respect except one and that is that the destruction of lymphocytes begins in 15 minutes. Similar results have been obtained by many other workers. In addition to these that I have mentioned there are others who seem to have proven conclusively that the lymphocytes in the circulating blood are equally

sensitive to irradiation and are destroyed in large numbers. Since it has been proven that lymphocytes are radio-sensitive in what manner does this exert a favorable influence on inflammatory tissue? Nature increases the infiltration of lymphocytes and leucocytes and the question will naturally arise as to why we want to decrease it by destroying the cells that nature has increased. It has long been known that leucocytes die after performing a certain function and so a plausible conclusion would be that these cells contain some substance, call it what you may, hormone, lysin, neutralizer, ferment, etc. Viewing it from this angle it could be reasonably assumed that roentgen rays liberate in a few hours what it takes nature several days or longer to do. This substance in turn then kills or neutralizes the invading offending organisms.

In conclusion, may I say that regardless of its mode of action irradiation is highly effective. I should like to make a plea for its more frequent use and thus, in most instances, save the patient many hours or days of suffering.

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WHEN THE DIABETIC MEETS THE SURGEON*

By

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It is manifestly impossible to consider all phases of the subject in great detail, so I have made an effort to enumerate a few particular points, hoping to arouse an interesting discussion.

Today this introduction of the diabetic to the surgeon is a frequent one because of several reasons. The incidence of surgery is higher in diabetics than in non-diabetics; diabetics are living to an older age than formerly; and finally, surgery in diabetics is much safer than in the pre-insulin age and is not to be denied where it is indicated.

Permit these few introductory remarks. Every diabetic is a potential surgical patient. Every surgical diabetic, whether complicated by infection or not, is a candidate for coma. Every surgical diabetic is an individual problem, no two of them pre-

senting identical pictures. It is quite necessary that either the surgeon or the medical man understand and appreciate the tangential points where the diabetic, carrying the extra load of infection, or surgery, or both, is apt to leave the charted road of the well controlled medical diabetic. Also, one or the other must be well acquainted with the by-ways leading back to that well charted road, or a large number of diabetic sheep will be counted missing.

There are two rather common extra-abdominal causes of abdominal symptoms in diabetics which frequently serve as an introduction to the surgeon. They require special reference because they are sometimes the cause of confusion. I wish to speak of the members of these groups as pseudo-surgical diabetics and dispose of them rather quickly. Some of them are known diabetics, some are unknown. In the first of these two groups, the patient is apt to be seized with acute pain which may be abdominal in type, may be associated with nausea and vomiting, and is usually associated with collapse and a fall in blood pressure. This is the patient with a coronary accident due to sclerosis and they are frequent in the list of diabetics. An insulin reaction in such a patient is fraught with danger and should be guarded against. The second group of pseudo-surgical diabetics is illustrated by the patient with abdominal pain, frequently colicky in type, nausea, vomiting and leucocytosis, sometimes extreme in degree. The patient may or may not be drowsy. The history of loss of weight, polydipsia and polyuria may suggest diabetes and sugar and acetone in the urine, elevated blood sugar and low carbon dioxide combining power of the blood, bear it out; but still the question of whether approaching diabetic acidosis and coma explain the picture or whether a true abdominal surgical lesion exists in the presence of diabetes must be decided. If there seems absolutely no doubt but that a surgical emergency is present, there is no reason for delaying longer than the time required to give an added supply of glucose intravenously, partially balanced by a small dose of insulin in order to tide the patient over to the postoperative period when active treatment can be begun. If there is doubt as to whether the abdominal symptoms are

*Read at a meeting of the Chattahoochee Valley Medical and Surgical Association, July 10, 1934.

caused by a true surgical condition or to diabetic acidosis, it is considered wise to begin active treatment of the acidosis by administration of insulin, glucose, enemas and external heat. If they are due to acidosis, they will show definite signs of improvement in several hours, whereas if due to a surgical condition, the symptoms will probably become intensified as the patient reacts and becomes more clear mentally. However, if doubt still exists, exploration is the safer procedure because infection is particularly treacherous in the diabetic. In this connection the abdominal discomfort of a hypoglycemic reaction should not be lost sight of.

Surgery in the diabetic falls into one of two classifications: first, that of choice; second, that of necessity. In regard to the former, the indications are considered to be the same as for non-diabetics, except for gallbladder disease, hyperthyroidism and tuberculosis, all three of which tend definitely to aggravate the underlying diabetes thus forming an added indication for surgical intervention. The mortality in operations of choice on diabetics is very slightly higher than in non-diabetics of the same age group and presenting the same surgical conditions. There is only one reason for this slight increase and that is the increased incidence and severity of degenerative cardiovascular changes in the diabetic over the non-diabetic. They cannot be lost sight of. Otherwise the diabetes should not interrupt convalescence where time is possible in which to evaluate the severity of the diabetes.

Certain points stand out in preparing the patient for operation. Starvation is decidedly contraindicated. For several days before operation is contemplated, carbohydrates should be increased over the usual amounts allowed, stepping up to 180 or 200 grams per day. Fats are best kept low and proteins at the usual level. Sufficient insulin should be given before meals to keep the urine sugar and acetone free. If this much carbohydrate is given and the urine kept sugar free, there is little chance that acidosis will develop.

The immediate preoperative treatment will depend on several factors; the type of operation, length of operative time and type of anesthesia. The main indication is to

send the patient to the operating room with an extra store of glycogen in his muscles and liver. This can best be done by glucose administered intravenously, partially balanced by insulin, remembering that one unit of insulin will balance between one and one-half to two and one-half grams of glucose. I feel that it is wiser not to give insulin during the last hour before operation is to be started unless in a very small amount compared to the amount of sugar present in the urine. This is particularly true if a general anesthetic is to be used. The point is that insulin reaches its maximum degree of effectiveness in about one hour from the time of administration and lasts approximately eight hours, gradually decreasing after the second hour. An insulin reaction during the operation might go unrecognized and end fatally or would, at best, complicate and lengthen the procedure when time is all important. Rather than have this happen, I would prefer for the patient to have some sugar in the urine, provided the urine is acetone free. The longer the operative time the more chance there is of depletion of the carbohydrate reserve with its resulting acidosis.

Just a word about anesthetics. Chloroform is decidedly bad. Ether likewise tends to cause the carbohydrates to be used excessively and complicates the postoperative treatment, by unconsciousness, nausea and vomiting. Amytal and avertin are long acting. Nitrous oxide is splendid for short procedures or where muscular relaxation is not important. Nerve block and paravertebral and parasacral anesthesia are effective, safe and are probably not used as extensively as they deserve to be. Local infiltration of novocaine is dangerous in areas of infection. Spinal anesthesia is the method of choice when the operative field is below the diaphragm. The contraindications are the same as in the non-diabetic, namely, severe shock or the presence of markedly sclerotic changes in the arteries, remembering that the sclerotic changes are more apt to be present in the diabetic and at an earlier age. Sclerotic changes are present in practically every patient who has had diabetes for as long as ten years, irrespective of the age of the patient.

Postoperative care of the surgical diabetic is best planned for the individual pa-

tient but a few points might be mentioned. The probable dehydration is best offset by administration of fluids by all routes possible up to at least 4,000 cubic centimetres in the first twenty-four hours. They are potential candidates for acidosis. The presence of sugar and acetone bodies in the urine, blood sugar determination, and the carbon dioxide combining power of the blood are points to help us detect the onset of this serious condition. The best way to prevent it is by the administration of carbohydrates by any means possible, the method depending upon the individual case. A glucose solution of over three per cent is better not used subcutaneously because of the possibility of infection developing.

Frequent examinations of the urine is perhaps the one most helpful procedure we have in determining the postoperative treatment of diabetics. There should be frequent blood sugar determinations, however, interspersed with urine examinations. If the patient is running a large amount of sugar and acetone and insulin is being pushed, the urine should be examined at least every hour, so that a careful check is always had on the patient. Seldom is the patient able to void so frequently and remember, in this particular case, we are concerned about the impending acidosis. In such an instance, I personally favor an indwelling catheter over frequent catheterization. Urine which has remained in the bladder since collecting the last specimen, one hour before, does not give a true picture of the immediate condition, so the bladder is best emptied just before the specimen is to be collected. As the urine begins to clear of sugar and particularly of acetone, great care should be taken in deciding the dosage of insulin because of the danger of insulin shock. Remember the effect of insulin already given is going to last approximately eight hours from the time of the individual dose. I have seen a number of patients in insulin shock who had passed over from a profound diabetic coma into an insulin reaction without ever regaining consciousness. A blood sugar determination as the patient begins to show evidence of a marked decrease in the severity of the acidosis is of very distinct value. Obviously glucose for intravenous use should be handy. It should be remembered that insulin reac-

tions are dangerous, particularly in the elderly patient, as they frequently precipitate an attack of angina or coronary occlusion which might end fatally.

Surgery of necessity in diabetics is synonymous with infection and gangrene.

The well known diabetic law to the effect that an infection increases the severity of the diabetes and decreases the effectiveness of insulin includes the axiom that a diabetic shows a marked decrease in resistance to infection.

A slight skin infection in an uncontrolled diabetic may attain terrific proportions in a very short time. The harmful effect of the infection on the underlying disease requires its prompt surgical treatment regardless of the acidosis which probably is present. Delay will nearly always aggravate the condition. It is far better to evacuate the pus first and to clear up the acidosis afterwards. Not only will the acidosis decrease in degree when the infection is controlled but the effectiveness of insulin will be tremendously increased and this should make us cautious in the dose of insulin post-operatively.

Furunculosis in a diabetic is usually best treated by proper control of the diabetes together with scrupulous cleanliness of the skin. Furunculosis, if uncontrolled, may lead to abscess formation, cellulitis, lymphangitis, or carbuncles. Of these, carbuncles are the most dangerous to life. The method of surgical treatment should be based on the principle of prompt and thorough drainage, irrespective of the acidosis, with control of the acidosis later. Nitrous oxide is the anesthetic of choice.

Gangrene is a complication of diabetes frequently requiring prompt surgical interference. It is not so common in the early years of the disease as it is in the mild and particularly untreated diabetics of long standing. It usually involves the lower extremities. The treatment and prognosis in diabetic gangrene are somewhat dependent on the type present, whether dry or moist. The dry type is thought to be the result of inadequate circulation. If the lesion is dry and very small and superficial, medical measures consisting of exact control of the diabetes, Buerger's exercise, dry heat with avoidance of wet dressings or salves may be safely tried in an effort to carry the patient

along until collateral circulation becomes established. By these measures it is frequently possible to save a limb or a portion of one, when the first impression was high amputation. We have all seen diabetics with pain in the legs, together with a foot which blanched on elevation and became dusky when held down, and which felt distinctly cooler than the thigh or the other foot, after several months become free of pain and the foot become warm and of good color, even though pulsation in the dorsalis pedis was still absent. Here collateral circulation has become established. If, however, the dry gangrene is massive or progressive or if it becomes moist and associated with severe infection, radical thigh amputation is indicated. There is usually an associated proximal lymphangitis which is an added indication for high amputation. Blood cultures should always be taken before operation because septicemia is frequently the cause of death in cases of moist or infected gangrene. This is still another indication for early and radical amputation when infection becomes progressive. The added infection of *Bacillus welchii* calls for early and radical surgery together with active serum treatment. This complication is frequent enough to make prophylactic administration of serum routine, in some clinics, in all cases of diabetic gangrene. The mortality of infected stumps or reamputations is higher than in cases of original high amputation. The presence of acidosis and hyperglycemia, together with severe infection and gangrene, makes rapid removal of the limb all the more imperative.

In cases where infection plays the primary role, pulsation of the dorsalis pedis artery is apt to be present, the foot is warm and of good color, pain is only in proportion to the infection and frequently less than that from a similar lesion in a non-diabetic, and gangrene is found only in the presence of severe infection or following trauma. In these cases conservatism has a place, provided the infection is not severe or progressive and the patient is not toxic from sepsis. Careful and frequent checking of the diabetic condition, with control of any existing hyperglycemia or acidosis, a painstaking effort at localization of the infection, followed by carefully selected and well done operations, together with watchful post-

operative care will, in these cases, often preserve useful feet and legs. Frequent inspection of the field preoperatively and postoperatively is necessary in order intelligently to decide when operative intervention is indicated. When a surgical diabetic is not doing well, do not blame the diabetes until every effort has been made to locate and properly deal with a surgical complication which is very apt to be present.

On deciding on the proper type of treatment of diabetic complications, particularly of the lower extremities, certain points stand out in bold relief. First of all is the condition of the patient himself. He may be old, feeble and unable to stand the long drawn out, bed confining conservative care of the gangrene or infection or both. Also he may be paralyzed and partially blind and unable to use the rather fancy, excellent weight-bearing stump of a Gritti-Stokes amputation. In such cases a low or mid-thigh amputation, quickly done, seems indicated. Second is the question of infection. If it is extensive or shows signs of progressing, high amputation with loose closure over drains is the safest procedure. The guillotine amputation is the quickest and secures better drainage. If an infection is slight, and shows signs of localizing, conservatism is indicated, but when pus forms it should be promptly evacuated. Buerger's exercises, alternately raising and lowering the leg, followed by the horizontal position, regularly carried out, help to cause a return of an adequate blood supply. Extreme heat or cold should never be used in a diabetic. Likewise when an amputation is done on a diabetic, a tourniquet should never be used because of possible damage to an already sclerotic arterial system.

If erysipelas becomes a complicating factor, much can be done by controlling the diabetes, together with active antitoxin administration.

Postoperatively, the main indications all point toward the prevention of dehydration, hyperglycemia and finally acidosis. We have the necessary means of prevention. First, an accurate check on the diabetic condition is always possible by means of examination of the urine for sugar and acetone together with blood sugar and carbon dioxide combining power determination. Water, glucose and insulin are our weapons of

attack. Frequent checks are indicated because the picture may change rapidly. We must be ready to change our method of attack or acidosis will have captured our patient and marched away with him while we were calmly sitting by congratulating ourselves on the splendid job we did in separating the patient from his acutely inflamed appendix or his infected gangrenous foot.

The effort should be made, as early as possible, to get the patient back on a regular and adequate diet, with insulin if necessary, because the convalescence of the diabetic will probably be prolonged over that of a non-diabetic, at best. During convalescence the patient should receive definite information in regard to the proper care of his feet or remaining foot. Cleanliness and prevention of infection, with instruction as to the proper types of exercise, should dominate these talks. Preventive diabetic surgery should be our watchword.

Surgery in diabetes has made rapid strides since the pre-insulin age and many diabetics have been reclaimed when before they would have been considered beyond hope of help by means of surgery. The surgical diabetic requires careful judgment, close attention, scrupulous care and surgical skill. These, fortified with advances made possible by improvements in diet, preoperative and postoperative care and the use of insulin, have caused the introduction of the diabetic to the surgeon to be more frequent and more pleasant for all concerned.

THE SURGICAL ASPECT OF PEPTIC ULCER

By

J. S. TURBERVILLE, M. D.
Century, Fla.

The indications for operation in peptic ulcer are: (1) gastric stasis; (2) repeated hemorrhages; (3) intractable ulcers, that is, those that do not yield in any measure to medical management; and (4) perforation.

Of group 1 it should be said that, regardless of the duration of the ulcer, if there is gastric stasis, operation should be performed. Repeated and severe hemorrhages

call for operation and sometimes ligation of the bleeding vessel. However, it is best in most instances to wait until the hemorrhage has ceased, if it will, before attempting any kind of operation. In regard to the intractable group, I mean to speak of the ulcer with the calloused margins. Even when healed the scar is so delicate that it opens up under the slightest provocation. Of course perforation calls for immediate operation.

Now, the type of operation performed should be based largely on one's skill and experience. To the average surgeon posterior gastrojejunostomy is perhaps the best, as gastrectomy, partial or complete, and excision of the ulcers of the duodenum are difficult and dangerous operations except in the hands of those well trained.

A great deal of judgment should be used in submitting bleeding patients, or those very anemic, to operations about the abdomen, especially about the stomach, as the period of no food intake and of low food intake immediately following these operations frequently causes the patient to die from starvation.

Operations for perforation should be prompt and as little done as possible to insure against further leakage. Soiling should be cleaned away, and, personally, I have always felt that a drain should be used down to the site of the perforation, in the kidney pouch (on the right side); and if soiling has reached the pelvis, a stab drain should be used at this point.

The mortality rate is very high in all cases where there is much soiling regardless of the time interval elapsing between the perforation and the operation. However, it is much higher in the delayed cases. Most of the perforations with little or no soiling make a good and prompt recovery.

Most peptic ulcers after perforation get well. Why this is true, I do not know. It suggests, however, that perhaps if these ulcers were turned in, by lembertizing the peritoneal surfaces many ulcers might be healed without gastro-enterostomy. However, so far as I know, no one has ever tried this. I do not think it wise, in the presence of a perforation, to attempt a gastro-enterostomy.

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THE USE OF DINITROPHENOL IN OBESITY

Human nature is such that mankind is ever in quest of "short-cuts" to a designated goal. Whether this goal points to wealth, to health, to happiness, or to a consuming desire to rid one's self of a disfiguring paunchiness of middle-age, these "short-cuts" are likely to insistently insinuate themselves. Unfortunately, it is true for both sexes that as an individual approaches the meridian of life, and, with metabolism slowed down, the balancing forces of nature are prone to assert themselves in the accumulation of unsightly waist-line adiposity. Such disfigurements seem to be distinctly more repellent to the fairer sex.

Body weight, regardless of constitution, endocrine disturbance or medication, depends in large measure on the proportion between the energy intake in the form of food and the energy expenditure. Dinitrophenol, a drug used in making dyes, has known marked physiologic effects in speeding up the metabolic rate when administered to human beings and this action has given rise to its use in a number of preparations for weight reducing. Tainter, Stockton, and Cutting, reporting on its clinical use in 113 unselected cases of obesity, state that a study of its pharmacologic properties shows that it has the power to in-

crease metabolism to very high levels without causing important damage to vital organs and functions. The most important side action observed in this series was a skin rash, urticarial or maculopapular in type, occurring in 7 per cent of the cases, and disappearing in from two to five days after withdrawal of the drug. Other dependable reports appearing in the literature point to distinct allergic and other reactions following its use as well as to histologic damage to liver and kidneys resulting from the use of dinitrophenol. While there appears to be as yet no adequate knowledge as to its effects when used over long periods of time, the entire medical profession will do well to bear in mind that dinitrophenol is potent and toxic and therefore dangerous, when used indiscriminately or without adequate professional supervision.

The number of fat-reducing preparations now being offered to a credulous public is stupendous; many of them contain this drug. Some of these products clearly state that they contain dinitrophenol, but some of them do not, inasmuch as products offered simply for reducing do not come within the scope of the Federal Food and Drugs Act.

In the light of these facts, does it not behoove both the physician and the one given to self-medication to carefully scrutinise every fat-reducing product on the market?

J. N. B.

INSULIN IN MALNUTRITION

For a number of years insulin has been employed in the treatment of non-diabetic malnutrition by many clinicians with generally favorable results. Recently Blotner¹ has reported his experiences with seventy-nine normal, thin individuals who have been treated by this method and who have been under observation from one to three years. These patients ranged from nineteen to seventy-one years of age and were normal except for malnutrition. "Most of them had been chronically underweight for years and had tried to gain weight by forced eating, long vacations, rest cures, and medicines. Many were somewhat ner-

1. Blotner, Harry: The use of insulin in malnutrition, New Eng. J. Med. 211: 103 (July 19) 1934.

vous, easily tired and lacking in energy. Some had dyspepsia and poor appetites, while others ate well. All were ambulatory and continued to perform their routine duties during insulin therapy."

These patients were taught how to sterilize needles and syringes and how to measure and inject insulin. Most of them injected themselves with ten units three times a day about twenty to thirty minutes before meals and usually the injections were given from six to ten weeks. A high caloric and well balanced diet was also insisted upon.

"After insulin treatment was started, each patient began to gain weight and some continued to gain at a remarkable rate." Some gained ten pounds while others added as much as twenty five pounds. After treatment was concluded it was found that in most of the individuals the weights have varied approximately within five pounds above or below the weight when insulin was discontinued. Local skin hypersensitiveness appeared at the site of injection in one-third of the cases, but this tended to disappear later on and no serious anaphylactic reactions were encountered.

"Shortly after insulin injections were begun, there was a marked improvement in the sense of well-being in many of the patients. Their appetites increased. Often they became less nervous and more cheerful. Clinically, the drug appeared to have a good general effect. The fat which was added was usually distributed over the entire body. The appearance of the patients improved notably." Blotner also says that "the gain in weight caused by the use of insulin appears to be due to an increased intake of food and an increased absorption and assimilation." He further states that there is experimental evidence to show that insulin stimulates gastric juice and the pancreatic and biliary secretions. And he assures us that there is very little danger from insulin hypoglycemia in these cases.

It is gratifying to read of yet another series of cases in which this method of treatment has worked so well after other means had failed. This simple treatment can be carried out by any intelligent patient who will go through a minimum of trouble and who will cooperate with his physician. And both patient and doctor should be encour-

aged by Blotner's sound and cheerful conclusion that "the use of insulin to produce a gain in weight in certain cases of non-diabetic malnutrition is a reasonable, uncomplicated, and practical method of treatment."
W. W. W.

NOTICE TO THE PROFESSION

On October 10th, 1934 the State Department of Health discontinued the distribution of triple typhoid vaccine and is now sending out a product containing the typhoid bacillus alone. Both the United States Army Medical School and the State Board of Health of Georgia have ceased to manufacture the triple typhoid vaccine. This subject will be discussed more fully in a future article in the Laboratory Section of this Journal.

ULTRAVIOLET THERAPY

Since earliest times the inhabitants of the earth have looked upon the sun as a god and throughout history are recorded its benefits. The Greeks worshipped the sun-god Apollo and knew the curative value of light therapy. Solaria were first built in the homes of the Greeks and later in the homes of the Romans, who made a fetish of sun baths for a period. Physicians of those times prescribed sunshine in the treatment of disease. Antyllus¹ recommended sun baths in the treatment of skin diseases and was one of the first to use this agent in treating rickets. During the middle ages there is little recorded of the use of light therapy. In the middle of the eighteenth century interest began to be renewed. The results obtained by sun therapy led to a demand for some form of substitute that could be controlled. In 1896, Aaron invented the mercury vapor lamp, which was manufactured by Peter Cooper Hewitt in 1902. This lamp was improved by Kromayer in 1904 by enclosing the mercury vapor arc in quartz instead of glass thus increasing the amount of radiation and the durability.

Finsen, is called the "Father of Light Therapy." In 1897 he reported his work

1. Mayer, E.: The Curative Value of Light. New York and London, D. Appleton and Co., 1932.

on the use of light therapy in the treatment and cure of tuberculosis. He invented and used the water cooled carbon arc lamp. Attracted by this remarkable work and contagious enthusiasm, a number of his countrymen built the Finsen Institute for research work in light therapy.

At present the two important sources of ultraviolet light are the carbon arc and the mercury vapor lamps. Due to its ability to provide a continuous cheap source of energy, the mercury lamp is in more general use. However, the carbon arc lamp can more nearly simulate sunshine, depending upon the impregnation of the carbons. This impregnation of the carbons with minerals also allows a great latitude in the type of energy that can be given a patient. The mercury lamp has a series of intense spectral lines ranging from 257 to 365 millimicrons. Six per cent of the total wave length is less than 290 millimicrons and has a high germicidal action. These lamps deteriorate as they grow older so that as the energy output is decreased the time of treatment must be lengthened. The cold quartz lamp has a spectrum predominately below 313 millimicrons. These rays not only destroy bacteria but also vitamin D.² Sunshine has a spectrum ranging from 290 to 4,000 millimicrons.

In using light therapy it is necessary to measure the amount of energy emitted from the lamp so as to know the dosage the patient is receiving. There are two types of measurement.³ The biologic and photochemical tests are sufficient for rapid, everyday determinations, but for more scientific data the thermopile, galvanometer and millivoltmeter must be used. These give the intensity of the heat and the wave hands. Sunlight varies from day to day in the same locality and in different localities at the same time, depending upon the weather and artificial man-made conditions, so that for accurate work an artificial source of ultraviolet light is preferred.

Various theories have been advanced regarding the causation of the effect of ultraviolet light upon the human body. Among them are: the light is changed to heat af-

ter being absorbed in the superficial layers of the skin; that the short waves are changed to longer waves on going through the skin and thus penetrate deeper; that the radiation affects the calcium and phosphorus balance; that there is a change in the atomic and electronic structure; and, lastly, that there are joined substances that are carried through the body by the blood.⁴ Some of these theories are rather far fetched and it is quite possible that no one will account for the reaction of the body to this form of therapy.

Since the popularity of ultraviolet therapy, which began immediately after the World War, it has been used for every disease condition and symptom whenever the manufacturer or profession could induce the patient to try it. Practically every type of disease condition has been reported benefited. From these enthusiastic testimonials has arisen a great deal of chaos in this field. In a large measure this confusion could have been obviated by a proper scientific approach to the subject; such as measurement of the radiation, knowledge of the physiologic and biologic effect of this form of radiant energy, and a careful, critical scrutinization of the results obtained. The literature is slowly being sifted out, irrational claims are being eliminated and this form of therapy is being put on a firm basis. The medical profession should ever be on the alert and not let enthusiasm run away with careful scientific judgment.

M. E. S.

4. Whitmore, E. R.: The biologic action of radiant energy: ultraviolet, *South M. J.* 27: 796-798 (September) 1934.

2. Coblenz, quoted by F. H. Krusen, *Light Therapy*, New York, Paul B. Hoeber, Inc., 1933.

3. Laurens, H.: *Physiological Effects of Radiant Therapy*, Chemical Catalog Co., Inc., 1933.

Ergotamine Tartrate.—The pharmacologic action of ergotamine tartrate is supposed to be antagonistic to adrenalin. It is considered a stimulant to smooth muscle contraction and a depressant to the sympathetic nervous system. In the relief of migraine it is assumed to paralyze the motor sympathetic while relieving vascular spasm believed to be a factor in the production of this pain. Further investigations of the drug promise not only relief from a most widespread and disabling affliction, but possibly a solution to a vexed and hitherto unanswered question—what is the mechanism of the production of the pain of migraine? —*Ed., Virginia Med. Monthly, Oct. '34.*

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE MEDICAL PROFESSION AND THE FORTHCOMING MEETING OF THE LEGISLATURE

By

J. N. Baker, M. D.
State Health Officer

The time is fast approaching when Alabama's lawmaking body—the legislature—will again assemble for its regular quadrennial session—January 1935. During the present administration and because of the deplorable plight of the State's finances, three sessions—the regular session of 1931 and two extra sessions—had to be held. Legislative sessions are both expensive and time-consuming; these three sessions being drawn out over a period of almost one year and at an expense to the State of something like one million dollars. During this past four-year period, so overwhelming were the State's financial needs that little time or thought was given to many problems of a sound, constructive nature which, under normal times, should have been claiming attention. Even now, when the next legislature convenes, it will be confronted by not a few knotty problems in finance which will demand much time and attention. However, in the light of the accumulated experience of the past four years, our problems and needs have become more clearly defined and, consequently, plans and legislation designed to care for these needs should promptly take shape. Furthermore, it may be confidently hoped that the legislative attitude of mind will be quite different from that displayed by our last legislature. Then the whole nation and all individuals were plunged into the deepest gloom and the resounding clamour from all sides was for deliverance from the crushing burden of taxation. Little heed was paid to the worthwhileness of governmental services representing years of planning and building. These must be pared to the quick and, if need be, abolished, in order to save the body politic from any additional tax load. These sentiments, universally prevalent, were mirrored and voiced in our legislative halls;

and, in such an atmosphere, little could be hoped for other than frantic efforts to, somehow, dig out of the quagmire. Now, the tempo is changed and we have a right to expect the incoming legislature to approach its problems in a courageous, confident and constructive manner, and thinking solely of the interests of the people whom they have been chosen to represent.

Many of the problems which will present should receive very earnest thought and consideration at the hands of the entire organized medical profession, for the reason that the people and the legislature have entrusted to this particular group the control and guidance both of its health affairs and of the regulation and enforcement of medical licensure. The record of faithful and unselfish performance in both these important fields can confidently be permitted to speak for itself. Here are some of the things to which the profession should be giving thought:

SALARY OF THE STATE HEALTH OFFICER

The Association's executive and administrative health official, serving the people of the entire State in all matters pertaining to health, is the State Health Officer; the responsibility of his selection and the framing of the broad health policies to be applied on a state-wide basis have been, by law, vested in the medical profession. Has not this group a right to expect that this servant of the people, chosen by this group, shall receive, as he formerly did receive, compensation in a measure commensurate with the dignity and burdens which such an office carries? This official's salary was so drastically dealt with by the last legislature as to create an inequity and injustice patent to all. While there should be little difficulty encountered in having this corrected, to do so will require action by the legislature, and the members of the profession should interest themselves in seeing that this matter is properly brought to the attention of their representatives. These comments are prompted, not through selfish motives of the present incumbent, but

from interest in the future welfare and security of health work in Alabama.

ALABAMA'S TUBERCULOSIS PROBLEM

Another item of direct and immediate concern to the medical profession is the problem of tuberculosis in Alabama. In the absence of any sort of state sanatorium for the tuberculous, a bill was passed in 1931 making provision for the construction of small sanatoria by counties, with the State participating in their upkeep through a special per diem subsidy for each case cared for. The recent legislature abolished this financial aid. During the Civil Works Administration activities, two counties—Jackson and Morgan—were able to have constructed such modest sanatoria, and, could at once begin operations, were this state subsidy available. Four other counties—Etowah, Jefferson, Mobile and Montgomery—are now operating tuberculosis sanatoria on an independent and purely voluntary basis, whose activities could be materially expanded were such aid given. This tuberculosis bill further provides that counties without sanatoria may participate in this subsidy (when reinstated) by making use of bed space in a general hospital within the county, where suitable arrangements can be made, or through arrangements with an already existing sanatorium in another county.

The possibilities inherent in pneumothorax and other forms of surgical therapy in selected, and more particularly the earlier, cases are so promising that many of our general hospitals throughout the State should be encouraged to utilise their now idle bed space in caring for cases suitable for this form of therapy. With proper nursing technic, and with the application of the simple scientific facts now so well known and rigidly applied as to the spread of tuberculosis, physicians can do much towards blasting the unwarranted dreads and prejudices entertained both by the layman and hospital authorities as to the dangers of contracting this disease. No good reasons exist why certain general hospitals should not be thinking in terms of thus enlarging both their scope of usefulness as well as their revenue.

For the United States as a whole tuberculosis ranks *seventh* as a cause of death;

in Alabama it ranks *third*, being outstripped only by heart disease and nephritis. With an annual death rate of over 2,000 and with more than 15,000 active cases, should not the medical profession of this State, whose definite and legal responsibility it is to at least point a way out, bestir itself sufficiently to furnish the necessary leadership? A real beginning can be made by having restored this state aid to counties; through such aid, coupled with home isolation now being promoted through the organised county health units, a real dent can be made and at less cost to the State than through expensive state-owned sanatoria. This program should constitute one of the outstanding battle cries of the profession when the legislature convenes in January.

RABIES

The incidence of rabies, both human and in animals, is definitely on the increase and at such a rate as to demand serious consideration at the hands of the medical profession and the legislature alike. Below are given the figures, by years, since 1929:

Year	Heads Examined	Treatments Distributed
1929.....	1,136	1,525
1930.....	1,105	1,785
1931.....	1,255	1,667
1932.....	1,685	3,676
1933.....	1,631	3,518
1934.....	1,921	4,506 (to October 1)

These figures eloquently speak for themselves and clearly point the need for a state-wide law which will effectively curb the migration of the vagrant, unattached canine, which constitutes the chief single offender. The legislature of 1919 enacted a state-wide law, which, had it remained on the statute books, would have brought results. However, one of the early actions of the extra session of the 1921 legislature was to abolish this act in toto; since which time no state-wide legislation has been given favourable or even sympathetic consideration. During the past year, however, so many sad experiences in rabies have happened throughout the State that the time seems most opportune for procuring such legislation as should really prove effective. Municipalities now have authority to adopt ordinances seeking to control this nuisance and quite a few, stimulated and aided by

the health department, have already done so. The State Health Officer plans to draft and have submitted in the legislature a bill, state-wide in scope, which should contribute to a material lessening of this frightful and preventable disease. This piece of legislation should constitute another of the profession's battle cries and every effort made to see that their representatives are impressed with its real need.

SUITABLE STERILISATION LAWS

Twenty-seven states already have some sort of laws dealing with human sterilisation. The only law now on Alabama's statute books directed in any way at this subject is that pertaining to the inmates of the Partlow State School for Mental Deficients. In scope, this law is so circumscribed as to, in no sense, encompass the problem; it might, however, be viewed as an entering wedge in an approach to the much broader problem of the heritable unfit and the chronic criminal. The steady increase in all types of mental disease and criminality cannot be ignored, and, if sound legislation is to be had in this field, medical thought and guidance must be made free use of. Just here is where the State Committee on Mental Hygiene of the Association, in collaboration with the committee recently appointed by the Governor and known as the State Committee on Criminal Justice, can likely render valuable service. Dr. W. D. Partlow, Superintendent of the State Hospitals for the Insane, is a member of this latter committee and has given considerable thought to this question. From the deliberations of these two groups, backed by the medical profession, should come valuable suggestions for the guidance of the legislature in this complicated and puzzling field.

STABILITY FOR COUNTY HEALTH WORK

Alabama's outstanding system of administering and dispensing health work on a county basis has steadily grown throughout the years and has amply proven its soundness and worth. Two years ago fifty-four of the sixty-seven counties were enjoying the benefits of organised health service; this represented nearly ninety per cent of the State's population; even now, with forty-seven counties still in operation, eighty-three and sixty-five hundredths per cent of the population remains protected.

These results have been accomplished entirely on a voluntary basis, in so far as county participation is concerned; once a county decides in favour of health work and voluntarily appropriates a sufficient amount, the State Health Department makes its contribution and proceeds to aid in the setting up of the necessary machinery. It has been because of this liberal state subsidy that county health units have been built up in many of our poorer counties and this aid must be continued. During the past year, and when funds actually available for all health work were greatly reduced below the amounts appropriated by the legislature, more than forty-five per cent of this total was immediately given to counties in the form of state subsidy for the support of their local health units. The urgent need for such service is now so great, and its benefits so far-reaching and proven, as to seem to justify its removal from the optional or voluntary category and placing it among the necessary activities carried on in each and every county. In short, has not the time come to still further stabilise health work within the county by creating a definite basis of appropriation to be made for the specific item of health work? This is a question to which the health department has given considerable study and it feels that, in many particulars, such a stabilising law would have much to commend it. Already one county—Conecuh—is now operating under a local bill which provides that one-half mill special tax is levied and collected to be applied exclusively for public health work. This act has been declared constitutional by the Attorney General of the State.

Two possible approaches to this problem present:

(a) One is that made by Conecuh County by authorising the levying of a special tax of one-half mill or more on the value of all property assessed for taxation, and to be used exclusively for public health work; or,

(b) One-half mill or more of revenues accruing to the general fund of a county to constitute a preferred claim for local health work.

The first plan suggested above would involve a delay of one year before it could become operative; while the second could be

put at once into operation. This whole problem of financing and stabilising local health work is one of deep concern to laymen, to physicians and to the incoming legislature, and should receive the consideration which its importance merits.

The items briefly presented above are some of the more important health problems in which all physicians and legislators should be interested and to which both

groups should be giving thought. It is the hope of the health department that physicians generally throughout the State will, after familiarising themselves with some of these more urgent needs, create the opportunity of discussing with their legislators these technical things before the legislature convenes in January. In this way can the doctors make a real contribution to the upbuilding of our State.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

WHAT AILS NURSING?

The recognition of a change in trends in nursing education resulted in the forming in 1926 of a Committee on the Grading of Nursing Schools. The Committee was composed of outstanding members of the medical and nursing professions, of educators and of lay groups. The Chairman of the Committee was William Darrah, M. D., of New York, and the Director, May Ayres Burgess, Ph. D., of New York. At intervals the progress of the Committee has been reported. The final report has just been released by the American Nurses' Association and is entitled, "Nursing Schools—Today and Tomorrow." To quote from the release, the report might be fittingly called "What Ails Nursing?"

The Committee's report ends with the following summary:

"1. Nursing, in its various aspects of bedside care, health education, and institutional service, offers one of the most attractive and congenial fields open to women and fills one of the most urgent needs of the modern social order.

"2. It calls for women of fine natural capacity, sound basic education, and high professional training.

"3. The present system of nursing education is, in general, not attracting as many women of adequate capacity and basic training as would be desirable and is not giving them the quality of training which fits them for the demands of their professional career. On the other hand it is producing

far too large a number of nurses of a type unsuited to those demands.

"4. The fundamental cure of these twin evils can be effected only by the development of nursing schools which are directed with a primary educational aim and animated by professional ideals. They must co-operate with hospitals but they must have their own management and their own budgets if they are to function as educational institutions and to meet the social needs of the community."

The final words of the report constitute a declaration and an appeal:

"The Committee believes that fundamental improvements in nursing education are a vital essential for the health of the American people and present perhaps the most important opportunity in the whole field of American education. We are confident that the evidence of the need for reform is unassailable and that the general lines of progress have been adequately outlined. We appeal to the nurses, the physicians, the hospital authorities, the colleges and universities, and the public to meet the challenge here presented."

F. C. M.

BUREAU OF LABORATORIES

James G. McAlpine, Ph.D., Director

NEW SPECIMEN CONTAINERS

Section 589, Postal Laws and Regulations of 1932, made certain drastic changes in the types of containers which may be used for the shipment of bacteriological laboratory specimens. Excerpts from this section are given below:

(a) Specimens of sputum, blood, serum, spinal fluid, feces, pus, diseased tissue, or other material, fluid in nature or shipped with fluid, shall be placed in stout glass containers of suitable sizes (but not more than 3 inches in diameter) closed with a cork or rubber stopper of good quality or by fusing the glass.

(b) The aforesaid container shall then be placed in a cylindrical tin box, with soldered joints, closed by a metal screw cover with a rubber or felt washer. The vial or test tube in this tin box shall be completely and evenly surrounded by absorbent cotton or other suitable absorbent in quantity sufficient to absorb the contents of the glass container should it be broken.

(c) The tin box with its contents shall then be enclosed in a closely fitting metal, wooden, or papier-mache box or tube, at least three-sixteenths of an inch thick in its thinnest part, of sufficient strength to resist rough handling and support the weight of the mails piled in bags. This tube shall be tightly closed with a screw top cover with sufficient screw threads to require at least one and one-half full turns before it will come off, and fitted with felt or rubber washer.

(d) Cultures in solid media and infectious materials or swabs shall be transmitted in a stout glass container of suitable size closed with a stopper of rubber, cork or cotton, and sealed with paraffin or covered with a tightly fitting rubber cap. The tube shall then be packed as prescribed in paragraph (c).

(e) Specimens of blood dried on glass microscopic slides for the diagnosis of malaria or typhoid fever by the Widal test shall be sent in any strong mailing case which is not liable to breakage or loss of the specimen in transit.

The metal ointment box with the manila envelope which has been used for so many years for the shipment of fecal specimens is no longer permissible. In its place the Bureau of Laboratories is sending out a small sputum bottle containing 2 per cent cresol solution and closed with a cork stopper. These, in compliance with Section 589 (b) and (c), are placed in cylindrical tin boxes with metal screw covers which are

in turn enclosed in the common mailing tubes. Unless care is taken in the preparation of these specimens, many of them will be unsatisfactory. Fecal samples ferment rapidly with the production of large volumes of gas which will blow out the cork stoppers as soon as the screw top is released. For that reason the cresol should not be poured out, and under no circumstances should the quantity of feces be greater in size than a small marble.

While this type of container will be satisfactory for individual specimens, it may not work as well for surveys. The Bureau of Laboratories has on hand a quantity of ointment tins which may be secured when large numbers of samples are to be taken in selected sections. These may be packed in cardboard boxes, as formerly, but they cannot be sent through the mails. It is advised that express, bus or messenger be used to convey these survey specimens to the laboratories.

These regulations have necessitated changes in the Wassermann containers also. The common mailing tube is supplemented with an inner cylindrical tin box with a screw cap. No longer will it be possible to pack several Wassermann tubes in one small container, thus saving postage. Nevertheless, those doctors who desire to send more than one blood specimen at a time can utilize the double typhoid container, which will hold four tubes. Care should be exercised that plenty of cotton is packed around each specimen to prevent breakage. This type of container will not be sent out routinely, but may be secured upon special request.

The diphtheria culture outfit also has an inner tin box. Furthermore, the tube containing the swabs must be sealed with paraffin or have a rubber cap over the cotton stopper. Since it was considered that paraffin would be unsatisfactory under field conditions, the Bureau of Laboratories is furnishing a seal of sheet rubber which is fastened around the tube with a rubber band. In all cases, these seals must be replaced on the tubes after the throat or nose swabs have been taken. In the near future these tubes will be fitted with rubber caps which should prove more suitable; these also must be replaced when the swabs are returned to the tubes.

The slide containers for malaria and gonococcus smears are permissible under the new regulations. Therefore, there will be no change in these.

Paragraph No. 4, Section 589 Postal Laws and Regulations of 1932, provides that bacteriological specimens for examination shall be pouched with letter mail, thus insuring First Class handling but can be sent at Fourth Class rates. Hence, the postage required on the different types of containers will be as follows:

Diphtheria	3	cents
Gonococcus	1½	cents
Hookworms	3	cents
Malaria	1½	cents
Sputum	6	cents
Typhoid	6	cents
Wassermann	3	cents

The un-iced water container, the double typhoid container and the one in which four Wassermann tubes may be packed are conveyed as Parcel Post. Each of these requires 8 cents in postage in the 1st and 2nd zones and 9 cents in the 3rd zone.

BUREAU OF PREVENTABLE DISEASE CONTROL

D. G. Gill, M. D., Director

VENEREAL DISEASE PROGRAM

For the past two years the health department has been unable to take any part in caring for the indigent case of syphilis and as a result most of this group have been dependent on the charity of physicians for any treatment received. In a few counties clinics have been maintained, partly by local government support and partly by the collection of small fees, but in most counties no definite program existed.

The treatment of the infectious case of syphilis is recognized as a public health problem, but it is also a community problem and requires the joint support of all agencies. In the larger centres the establishment of clinics is probably the best approach and such clinics should be approved by the County Medical Society. In one county the Medical Society is operating a clinic on a small fee basis. Three physicians, nominated by the society, rotate as clinician and receive as remuneration the

fees collected, all cases, of course, being referred by physicians. Such plan of procedure might well be inaugurated in other centres.

To care for the indigent case in the more rural parts of the State the department is now prepared to cooperate by furnishing a limited supply of drugs under the following restrictions:

1. *Indigent patients only.* The physician receiving the drugs to certify as to the indigency of the patient.

2. Primary and secondary cases only, or tertiary cases with an infection acquired within the past three years. From the public health standpoint this group is the most important to render non-infectious.

3. If date of infection is not known: (a) women under 40, (b) men under 35.

4. County health officers to be responsible for: (a) distribution of drugs, (b) slip of indigence, (c) proper reports to this office.

5. In the case of recent infections an epidemiologic investigation as to source, contacts, occupation, etc. Follow-up of sources reported and necessary control steps.

6. Patients discontinuing treatment before completion should be investigated and efforts made to return them to their physicians.

7. The following bulletins are being revised and printed. Appropriate ones (including the one on prophylaxis) should be given to each patient on their first visit for treatment:

Sex Education in the Home.

Facts about Venereal Diseases.

Venereal Disease Information for Men (Prophylaxis).

Healthy, Happy Womanhood.

Keeping Fit.

Personal Advice to Patients Suffering From Syphilis.

In counties without health departments requests for drugs should be made to the State office and they will be filled as far as supplies will permit. Reports as to the use of these supplies will, of course, be essential.

BUREAU OF VITAL STATISTICS

Ethel R. Hawley, Acting Director

THE RISING TOLL OF MOTOR VEHICLE
ACCIDENTS

Accidents are not usually considered a public health problem, but anything that causes more than three times as many deaths in Alabama each year as typhoid fever certainly merits consideration in that connection. The death rate for automobile accidents increased every year until 1930 when it was 18.5 per 100,000 population. There was a decrease in 1931 and 1932, probably due to the depression and fewer cars on the road, since there were 50,675 less cars registered in Alabama in 1932 than in 1930. The death rate is again rising rapidly.

The recorded number of deaths from motor vehicle accidents occurring in Alabama for 1933 was 494, with a rate of 18.0 per 100,000 population, which is slightly less than the 1930 rate but an increase of 14.6 per cent over 1932. This increase occurred in rural areas and small towns and cities since the rate of 14.0 per 100,000 for 1933 for cities of 10,000 population and over is less than the rate of 15.8 for the same cities in 1932. Indications are that motor vehicle fatalities will reach a new high level in 1934, since the first eight months of 1934 show an increase of 28 per cent in the death rate from this cause over the corresponding period of 1933.

A table showing type of accident, rates per 100,000 and per cent each type of accident is of total classifiable accidents for both urban and rural areas follows. All places are designated as urban with a population of 2,500 and over.

Number Of Motor Vehicle Fatalities By Type Of Accident With
Rates Per 100,000 Population And Per Cent Each Type
Is Of Total Known Type Urban and Rural—1933

	All Deaths			Urban			Rural		
	No.	Rate	%	No.	Rate	%	No.	Rate	%
Total	494	18.0		105	13.6		389	20.3	
Not Stated	13	0.5		1	0.1		12	0.6	
Pedestrian	193	7.1	40.1	62	8.0	59.6	131	6.8	34.7
Other Motor	87	3.2	18.1	23	3.0	22.1	64	3.3	17.0
R. R. Train	11	0.4	2.3	2	0.3	1.9	9	0.5	2.4
Electric Car	4	0.1	0.8	4	0.5	3.8			
Bicycle	4	0.1	0.8	2	0.3	1.9	2	0.1	0.5
Horse Drawn Vehicle	8	0.3	1.7				8	0.4	2.1
Animal	2		0.4				2	0.1	0.5
Fixed Object	24	0.9	5.0	5	0.6	4.8	19	1.0	5.0
Non-Collision—									
Operating	144	5.2	29.9	5	0.6	4.8	139	7.2	36.9
Non-Operating	4	0.1	0.8	1	0.1	1.0	3	0.2	0.8

There were 452 accidents in which one person was killed; ten accidents in which two persons were killed; six in which three persons were killed, and one in which five persons were killed. The total number of fatal accidents was 469.

Of the 494 deaths, eighty, or 16 per cent, were under fifteen years of age and fifty-one, or 10 per cent, were sixty-five and over. This is an increase over 1932 in both number and per cent these groups are of the total. In 1932 15 per cent were under fifteen and nine per cent were over sixty-five years of age. Deaths by sex, color and age groups follow:

	—White—		—Colored—	
	Male	Female	Male	Female
0-4 Years	13	3	3	2
5-14 Years	31	12	15	1
15-24 Years	67	19	35	2
25-64 Years	145	23	57	14
65 Years and Over	32	9	9	1
Age Not Stated	1			

The day of occurrence of four fatal accidents was not given. Of the other 465 accidents, by far the greater number occurred on Saturday, 20.6 per cent. The hour of occurrence was not determined on 91 accidents, but over one-fourth of those accidents on which hour of occurrence was given occurred between the hours of four and seven in the afternoon (28%).

Accidents involving pedestrians were responsible for 193 or 40 per cent of all in which the class of accident was stated. In 1932 only 123 of the fatalities were pedestrians or 30 per cent of the classifiable accidents. The two most peculiar accidents of the year happened to pedestrians. In one case a man had stopped his truck and gotten off to pick up a man whose mule had thrown him, when he was run over and killed by a passing car. In the other case the deceased was walking along a street when a driver lost control of his car and ran into a post supporting an awning in front of a store. The roof fell on the man walking beneath.

One hundred and thirty-one of these fatalities occurred on country roads or in towns of less than 2,500 population, while 62 were urban.

Non-collision accidents were responsible for 139 accidents with 144 fatalities or 29 per cent of the total. This includes all ac-

cidents where a car overturns without collision with another car or with a fixed object. It is quite significant that only twenty, or 14 per cent of these accidents were attributed to mechanical defects of the car. While in only four cases was speeding given as a definite cause of the accident, in most of the non-collision accidents, aside from those due to mechanical defects and falls, the element of speed enters in.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

PRACTICAL APPLICATION OF THE REGULATIONS GOVERNING THE IMPOUNDING OF WATERS

The State Department of Public Health regulations governing the impounding of waters have now been in effect sufficiently long to demonstrate their practical value in preventing increase of malaria around artificial lakes in Alabama. These regulations, having the force and effect of law, were first put into operation in 1922. A technicality required repassage in 1927.

The procedure set out in the regulations is aimed at making ponds unsuitable for anopheles mosquito production by natural means. This is termed biologic control. The principal requirements of the regulations are that the basin of the pond be cleared and otherwise prepared so as to result in a clean water surface when the lake is impounded.

The regulations are flexible, which fact has permitted the best and most economical malaria control procedure to be followed on each project. This is well, as the many variable factors bearing on malaria transmission make each project an individual problem. It has been the policy of the department to hold malaria control as the ultimate goal; permitting owners, within this limit, to maintain and operate the pond in keeping with the purpose for which it was constructed.

Occasionally it has been necessary to use emergency measures due to temporary failure of the provisions for natural or biologic mosquito control. Such emergencies have usually arisen as a result of impounding in the summer time or maintenance of a constant water level. These situations have

been met by one or a combination of the following measures:

(a) Primary measures directed at mosquito control on the pond; consisting of shore line clearing, water level fluctuation or application of larvicide (oil or Paris green).

(b) Secondary measures directed at preventing malaria transmission among the population of mosquito infected areas; consisting of distributing bed nets, house screening or routine spraying of houses with an insecticide.

Of the several measures which may be directed at mosquito control, water level fluctuation has proven the most effective. While thorough cleaning of a basin prior to impoundage will result in a clean water surface on the whole, there will be marginal areas in protected bights which will produce mosquitoes if a constant water level is maintained. This is due to the accumulation of flottage and occurrence of aquatic growth. Seasonal and periodic water level fluctuation tends to strand accumulated flottage and limit aquatic growth in such areas thereby limiting the food and protection afforded mosquito larvae.

The success of Alabama's impounded water regulations in preventing increases in malaria prevalence around artificial ponds may be seen in many projects located in various parts of the State varying in size from the small fish pond to the large hydro-electric lakes. In contrast is the record of pronounced increases of malaria prevalence around certain ponds put up before the regulations were in force.

C. C. K.

SPECIAL NOTICE

YEAST AGAIN AVAILABLE

The American Red Cross has recently announced that it has again made available to local chapters a supply of yeast for pellagra families. Under the proposed plan of distribution local depots will be established throughout those counties having a pellagra problem and patients can obtain needed supplies at these depots on prescription from their physician. The value of yeast in pellagra has been well established and this plan will enable physicians to prescribe it and know that it can be obtained.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE
DISEASES IN ALABAMA

	August	Sept.	Estimated Expectancy Sept.
Typhoid	179	101	128
Typhus	35	36	13
Malaria	1055	1367	687
Smallpox	0	0	5
Measles	195	112	30
Scarlet fever	45	106	116
Whooping cough	126	115	75
Diphtheria	113	275	251
Influenza	13	45	21
Mumps	10	12	23
Poliomyelitis	15	10	7
Encephalitis	0	3	2
Chickenpox	12	7	8
Tetanus	2	6	5
Tuberculosis	204	288	355
Pellagra	29	21	52
Meningitis	4	2	4
Pneumonia	59	60	61
Syphilis (private cases)	226	348	178
Chancroid (private cases)	2	2	5
Gonorrhea (private cases)	159	200	192
Ophthalmia neonatorum	1	2	1
Trachoma	2	0	1
Tularemia	0	0	0
Undulant fever	10	8	2
Dengue	10	234	0
Amebic dysentery	0	2	0
Rabies—Human cases	1	0	0
Positive animal heads	71	75	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

ALABAMA, AUGUST 1934

CAUSES	Number of Deaths Registered August 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	August 1934	August 1933	August 1932
ALL CAUSES	1219	978	2197	933.9	937.4	929.5
Typhoid fever	11	9	20	8.5	7.3	5.7
Typhus fever		2	2	0.8	1.7	
Smallpox						
Measles	10	5	15	6.4	0.4	
Scarlet fever	1		1	0.4	1.3	0.4
Whooping cough	13	13	26	11.0	6.9	8.7
Diphtheria	5	2	7	3.0	7.3	7.0
Influenza	7	4	11	4.7	6.4	9.1
Pneumonia, all forms	35	31	66	28.0	25.8	32.2
Poliomyelitis	4		4	1.7	0.4	
Tetanus	2	3	5	2.1	2.1	2.6
Tuberculosis, all forms	44	71	115	48.9	67.9	71.0
Tuberculosis, pulmonary	40	63	103	43.8	61.9	66.2
Malaria	26	19	45	19.1	15.6	10.4
Cancer, all forms	98	30	128	54.4	56.3	52.7
Diabetes mellitus	10	6	16	6.8	9.4	8.7
Pellagra	15	17	32	13.6	13.7	14.8
Cerebral hemorrhage, apoplexy	65	37	102	43.4	46.8	50.1
Diseases of heart	176	134	310	131.8	118.6	113.2
Diarrhea and enteritis, Under 2 years	48	20	68	28.9	35.2	23.5
2 years and over	16	8	24	10.2	13.7	12.6
Nephritis	113	78	191	81.2	76.9	80.5
Puerperal state, total	15	20	35	14.9	12.5	17.8
Puerperal septicemia	6	2	8	3.4	2.6	5.7
Congenital malformations	11	3	14	5.9	5.6	5.7
Congenital debility and other diseases of early infancy	78	43	121	51.4	51.5	57.5
Senility	13	14	27	11.5	13.3	15.2
Suicides	12	2	14	5.9	5.1	6.1
Homicides	16	33	49	20.8	22.8	19.6
Accidental burns	3	2	5	2.1	3.0	2.2
Accidental drownings	5	4	9	3.8	5.1	7.8
Accidental traumatism by firearms	2	3	5	2.1	3.4	3.5
Mine accidents	3	1	4	1.7	1.7	
Railroad accidents	1	2	3	1.3	6.9	5.2
Automobile accidents	25	16	41	17.4	22.3	17.4
Other external causes	48	18	66	28.0	27.5	23.1
Other specified causes	225	165	390	165.8	148.7	155.4
Ill-defined and unknown causes	63	163	226	96.1	99.2	89.7

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

Dr. James S. McLester, Professor of Medicine at the University of Alabama and President-Elect of the American Medical Association, delivered the annual Gorgas address before the La Fayette Guild Chapter of the Gorgas Medical Society at the University of Alabama on October 3. His subject was "The Drifting Sands of Medical Practice." The occasion was in commemoration of the 80th birthday of William Crawford Gorgas.

* * *

Dr. H. Earle Conwell conducted a fracture clinic during October at the Duke University, School of Medicine, Durham, N. C.

The fracture clinic was sponsored by Duke University for the benefit of all doctors in North Carolina interested in fractures.

* * *

Members of the Medical Association are invited to attend the first meeting of the Southeastern Branch Society of the American Urological Association at the Biltmore Hotel, Atlanta, December 7th and 8th, 1934. Announcement of the meeting carries the following information relative to the Southeastern Branch and its approaching meeting.

The American Urological Association is now the largest urological association in the world, having about 1,000 active members.

Since the organization of the Association in 1902, there have been but two meetings of the Association in the Southeast—New Orleans in 1903 and Memphis in 1931.

Recently, the American Urological Association has granted permission for the formation of a Southeastern Branch Society of the A. U. A., its members to reside in Alabama, Georgia, Florida, Louisiana, North Carolina, South Carolina, and Tennessee. There are seventy-seven urologists living in this area who are members of the American Urological Association.

The importance of the Branch Societies in the affairs of the National Association has been greatly increased by the recent adoption of an amendment to the Constitution and By-Laws which makes it necessary for an applicant for membership in the A. U. A. to become first a member of his lo-

cal Branch Society; only in very exceptional instances will this requirement be set aside.

The Southeastern Branch Society has been granted permission to have as active members not only those who are members of the A. U. A., but also urologists of exceptional qualification, who may not wish to join the A. U. A. Provision has also been made for an associate membership in the Branch Society to be composed of those who do not for some reason qualify for active membership but yet desire to attend the Society's meetings and participate in the discussions of urological problems.

The first meeting of the Southeastern Branch Society will be held in Atlanta, Georgia, December the seventh and eighth, and the officers of the Society have decided to present a program composed of addresses by the most prominent and best known urologists in the United States, so that every physician in the southeastern territory, who is interested in urological matters, will be anxious to be present. The value of the activities of the organization will in time be measured not only by the quality of the service which it renders the American Urological Association and the members of the Branch Society, but also by the service which it renders the general medical profession and the public of the Southeastern States by constantly improving the standard of urological practices and by transmitting to the whole medical profession and the public such knowledge of urological procedures as may be useful to them. Therefore, every physician in the southeastern territory who is interested in urology will be invited to attend the meeting and the addresses delivered will be planned for presentation to the general medical man as well as to the specialist in urology. All physicians who are practicing urology, regardless of whether they limit their practice entirely to urology, will be specially invited to be present so that they may become sufficiently informed concerning the plans and activities of the organization to decide whether or not they desire to make application for membership.

Among those invited to present papers are Dr. Edwin Beer of New York, Dr. Dellinger Barney of Boston, Dr. William Braasch and Dr. Hugh Cabot of the Mayo Clinic, Dr. A. I. Folsom of Dallas, Dr. Herman Kretschmer of Chicago, Dr. Alexander Randall of Philadelphia, Dr. George Gilbert Smith of Boston, and Dr. Hugh Young of Baltimore.

Further information concerning the Society and the December meeting can be obtained from any member of the Executive Committee composed of Dr. W. L. Bazemore, Macon, Georgia; Dr. E. S. Gilmer, Tampa, Florida; Dr. H. W. McKay, Charlotte, North Carolina; Dr. J. C. Pennington, Nashville, Tennessee; Dr. J. J. Ravenel, Charleston, South Carolina; Dr. W. A. Reed, New Orleans, Louisiana; (Dr. C. W. Shropshire, Birmingham, Ala., Appointed). Or the officers, Dr. Montague L. Boyd, Atlanta, President; Dr. Edgar G. Ballenger, Atlanta, President-Elect; and Dr. Earl Floyd, Atlanta, Secretary-Treasurer. Application blanks for membership and other information will be sent on request by the Secretary, Dr. Earl Floyd, 478 Peachtree Street, N. E., Atlanta, Georgia.

Dr. John Raymond Hume, Professor of Otolaryngology in the Tulane University School of Medicine, will be the guest of the Montgomery County Medical Society at its meeting on Monday night, November 26th, at the Jefferson Davis Hotel.

* * *

More than a thousand investigators and research workers were present at the formal opening of the new Lilly Research Laboratories at Indianapolis on October 11. The gathering of distinguished visitors representing many noted bodies and famous institutions in this and foreign countries as well, assembled in a mammoth tent erected for the occasion adjacent to the Lilly Laboratories.

At the formal opening exercises, in the afternoon, Eli Lilly, head of the Lilly organization, presided as chairman. Mr. J. K. Lilly, chairman of the board of directors, was introduced and responded briefly on "Research in Manufacturing Pharmacy" from the time of his entrance in the organization in 1876 up to the present, when there is so much evidence of the fact that medical science, in becoming an integral part of our social structure, has, in turn, become in a broad measure dependent upon industrial development.

Following Mr. Lilly's remarks, Dr. Irving Langmuir, director of research for the General Electric Company, discussed "The Unpredictable Results of Research." The speaker stressed the point that fundamental research should be pursued by industrial corporations regardless of any immediate possible commercial return therefrom. He gave an account of his purely theoretical gas adsorption studies which ultimately led to the development by the General Electric Company of their present highly efficient electric light bulb.

The chairman then introduced Sir Frederick Banting, who talked on "The Early History of Insulin." He gave an account of the early experiments conducted by Dr. Best and himself which first demonstrated the existence of Insulin, and expressed his great appreciation of the co-operation which he and his associates had received from the staff of the Lilly Research Laboratories in the development of a practical, large-scale procedure for the production of Insulin.

Sir Henry Dale, director of the National Institute for Medical Research, London, and secretary of the Royal Society, was the last speaker on the afternoon program. He chose as his topic "Chemical Ideas in Medicine and Biology." Sir Henry spoke of the immediate objectives of research in such laboratories as those of Eli Lilly and Company, and of their natural and proper differences from those of the laboratories supported by academic or public endowment. It was his thought, however, that the differences in result for the progress of medical science are often more formal than real. He expressed the hope that the growth of co-operation between those working in these different spheres might yet bring to many the rather rare privilege that had come to him of migrating from one to the other and back again, and thus of knowing at first hand the best that each can offer.

According to Sir Henry, the change that has taken place in the scope of pharmacy has a revolutionary aspect. He cited the fact that pharmacy not very many years ago was predominantly concerned with the traditional drugs that had come into use through empirical observation. Even though with the years had come new additions from time to time, the therapeutic outlook and attitude had changed but little for centuries. He pointed out that a beginning had been made by pharmacology toward rationalizing the use of those drugs in common use which had an action sufficiently definite to be susceptible to experimental analysis. The attitude of the physician and that of the investigator, in the opinion of the speaker, was, however, one of skeptical pessimism.

"The transformation of the whole aspect of one disease by the discovery of Insulin has attracted a more general attention," said the speaker, "than almost any other advance in medical science within our time." He was of the opinion that this discovery might be considered indicative of the wider progressive change in therapeutic method, based upon new knowledge of the causes of disease and aiming at the removal of those causes.

The speaker expressed the thought that looking at the change as a whole, one might distinguish two main contributory factors:

The *first* of these was the recognition of

infections as due to the invasion of the body by living micro-organisms. It is a commonplace, he said, that preventive medicine was born of this discovery, that it gave a new direction to the therapeutics of infective diseases, in the search for remedies specifically killing or limiting the growth of the infecting micro-organisms or specifically neutralizing the poisons which they produce in the infected body. A few of the older remedies, indeed, according to the speaker, owed their value to an unconscious application of such specific actions for the control of infective organisms which modern research has since identified: cinchona, ipecacuanha, mercury, and the iodides. Contrast with this, he said, the resources of modern therapeutics, with its range of antitoxins and bacterial products, and its growing list of new synthetic compounds discovered as the result of deliberate and organized search for substances which shall be harmless to the infected patient in doses which kill or prevent the multiplication of the infecting organism. Ehrlich, said the speaker, termed this new type of therapeutics "chemotherapy." A new and exactly chemical basis for these mysterious phenomena of immunity is even now being built, according to Sir Henry, the synthetic production of artificial specific remedies for infection which has, in the course of some twenty-five years, given us arsphenamine and other organic arsenical compounds such as tryparsamide; various derivatives of antimony; complex organic substances related to the dyestuffs on the one hand or to natural alkaloids on the other, and specifically effective against the trypanosomes of African sleeping sickness, or against the parasite of malaria, still the most deadly enemy to human life and health, if we view the world's peoples as a whole. We may properly class these synthetic substances, according to the speaker, with the antitoxins and other antibacterial substances, as artificial and natural agents for the removal from the body of harmful invaders from without.

A *second* principal factor in this change in therapeutic outlook many be found, said the speaker, in the recognition of diseases due to the lack of substances normally present in the body. Modern therapeutics, he said, can show no triumphs more brilliant than those which have followed the discov-

ery of methods of preparing a number of glandular products in a state of sufficient purity to enable them, by artificial administration, to correct an abnormal deficiency. In the speaker's opinion, there can be no doubt that preparations from these glands are destined to acquire an increasing range and success of application, as the methods for purifying and stabilizing their subtle principles are progressively improved, and as clinical science, thus able to apply them, recognizes more clearly the conditions due to partial defects of their natural supply.

It is Sir Henry's thought that there is the second class of specifically acting substances, necessary like the hormones for healthy function and growth, but obtained by the body mainly from the food, and known to all the world as "vitamins." He related the story of Jacques Cartier and his expedition, when they landed in Canada four hundred years ago. Being attacked by scurvy, they learned from the native Indians to cure the condition with an infusion of the fresh sprouting tips of a species of fir tree. Nobody can guess how long the Canadian Indians had possessed this life-saving knowledge, just as those of the South American continent knew of the value of cinchona bark in fevers and of ipecacunaha in dysentery. This method of treating scurvy, said the speaker, passed out of the white man's memory for yet another two centuries. Sir Henry told how the Royal Society of London, when giving to James Cook the Copley Medal, based the award on his improvement of methods for preventing disease among sailors.

It would be possible, he said, to regard this remarkable change in therapeutic outlook and method simply as one phase in the general scientific development which has transformed a whole range of human activities in a generation. He felt that if we look for a particular rather than a general cause, we shall find it in the rapidity with which chemical knowledge and ideas have, in this same period, permeated the whole of medical and biological science. Biochemistry was referred to as having taken rank among the great divisions of science, and its influence, he thought, penetrated the whole range of the medical and biological sciences, while or-

ganic chemistry itself was showing a welcome tendency to recover its original objective, in studying the products and processes of living organisms.

The newer developments have but little relation to the art of the individual pharmacist whom our fathers knew, said the speaker, but we must resign ourselves, as in other spheres of human activity, to the loss of the individual art in exchange for scientifically organized production. In fact, he continued, in order to meet these novel, various, and expanding demands of modern therapeutics, pharmacy has to become one of the most highly organized departments of scientific manufacture, covering an extraordinary range of expert knowledge and equipment. It now needs stables and pasturage, incubation rooms for large-scale culture of a wide variety of bacteria, and sterile rooms for manipulation of the products; chemical plant adapted to the difficult synthesis of complex and delicate compounds, or to the chemical and physical separation and purification of unstable natural principles, from animal organs only obtainable in adequate quantity and freshness by the co-operation of highly organized abattoirs. He cited, in addition, a much more fundamental requirement, calling particular attention to the need for research undertaken in the spirit of free inquiry, often with no immediate practical aim or any probable result other than the increase of fundamental knowledge.

The speaker paid tribute to Eli Lilly and Company for their high rank among industrial organizations which have supported scientific research for its own sake and because they have known how to value the spirit which is engendered when scientific workers are given a wide freedom.

The afternoon speaking program was followed by an inspection of the new laboratories, the party being divided into small groups in the charge of guides.

In the evening a banquet was tendered the out-of-town guests. Mr. J. K. Lilly served as toastmaster and responses were made by Sir Henry Dale; Dr. Elliott T. Joslin, of Boston; Dr. George R. Minot, of Boston; Dr. Frank R. Lillie, of Chicago; Dr. George H. Whipple, of Rochester, N. Y.; Dr. Carl Voegtlin, of Washington, D. C.; and Dr. G. H. A. Clowes, head of the Lilly Research Laboratories.

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MASSIVE ATELECTASIS IN RELATION TO LOBAR PNEUMONIA*

By

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It is a tribute to the universal interest which this subject incites in medicine to record the fact that the recent very interesting historical review of Bowen¹ on the subject contains a list of two hundred and twenty references.

Atelectasis, and particularly *â*telectasis and its relation to lobar pneumonia, is a matter which properly engages the attention of many branches of the profession either actually or by implication. It is not at all surprising then to find that contributions on this subject come to us from many sources, which represent the work of men specializing in various fields. It is not surprising that this is so, for atelectasis is found in connection with such a variety of circumstances that it is frequently called to the attention of the bronchoscopist, the radiologist, the anesthetist, the surgeon, the specialist in pulmonary tuberculosis, and the specialist in internal medicine.

No inconsiderable part of the interest which is taken in atelectasis at this time is due to the monumental work of Coryllos and Birnbaum,² whose contributions on this

subject have been appearing in current literature for the past six or seven years. These contributions make an imposing addition to the experimental side of medicine in America. Other contributions, coming from the surgical side of the profession, which are well worthy of mention, are those of Brunn and Brill,³ Faulkner,⁴ Faulkner, Fregeau and Faulkner,⁵ Roeder,⁶ Scott,⁷ Elkin,⁸ Bradford,⁹ Gwyn,¹⁰ and many others.

Papers reviewing the matter from the radiologic side which are of great interest

tasis (apneumatosi) and pneumonitis, considered as phases of same syndrome, *Surg. Gynec. Obst.* 50: 795-827, May '30.; Coryllos, P. N.: Postoperative apneumatosi (atelectasi) and postoperative pneumonia; experimental evidence, *J. A. M. A.* 93: 98-99, July 13, '29.; Coryllos, P. N., and Birnbaum, G. L.: Bronchial obstruction; its relation to atelectasis, bronchopneumonia and lobar pneumonia; roentgenographic, experimental and clinical study, *Am. J. Roentgenol.* 22: 401-430, Nov. '29.

3. Brunn, H., and Brill, S.: Observations on postoperative pulmonary atelectasis; consideration of some factors in its etiology, prevention and treatment, *Ann. Surg.* 92: 801-837, Nov. '30.; Brunn, H., and Brill, S.: Atelectasis; review of its history, significance and treatment, *West. J. Surg.* 38: 647-662, Nov. '30.

4. Faulkner, W. B., Jr.: Internal drainage; its application in pulmonary suppuration, *J. A. M. A.* 95: 1325-1328, Nov. 1, '30; also, *Tr. Sect. Practice Med., A. M. A.* pp. 237-252, '30.

5. Faulkner, W. B., Jr., Fregeau, A. N., and Faulkner, E. C.: Migrating pneumonia; certain mechanical factors in its production, prevention, and treatment, *Ann. Int. Med.* 6: 1289-1297, April '33.

6. Roeder, C. A.: Mechanical considerations of inspiration during and following operations, *Nebraska M. J.* 17: 275-280, July '32.

7. Scott, W. J. M.: Massive atelectasis and postoperative pneumonia; prophylaxis and treatment, *J. A. M. A.* 93: 101-103, July 13, '29.

8. Elkin, D. C.: Intrapleural pressure in postoperative atelectasis, *Ann. Surg.* 86: 885-889, Dec. '27.

9. Bradford, John Rose: Massive collapse of lung as result of gunshot wounds; with especial reference to wounds of chest, *Quart. J. Med.* 12: 127-150, '19.; *Idem*: *Oxford System Med.* 2: 127-137, 1920-27.

*Presented to the Association in annual session, Birmingham, April 18, 1934.

*From the Medical Section of the Employees' Hospital.

1. Bowen, D. R.: Acute massive collapse (atelectasis) of lung, *Am. J. Roentgenol.* 21: 101-141, Feb. '29.

2. Coryllos, P. N., and Birnbaum, G. L.: Alveolar gas exchanges and atelectasis; mechanism of gas absorption in bronchial obstruction, *Arch. Surg.* 21: 1214-1281, Dec. (pt. 2) '30; Coryllos, P. N., and Birnbaum, G. L.: Circulation in compressed, atelectatic and pneumonic lung (pneumothorax-apneumatosi-pneumonia), *Arch. Surg.* 19: 1346-1424, Dec. (pt. 2) '29.; Coryllos, P. N.: Postoperative pulmonary complications and bronchial obstruction; postoperative bronchitis, atelec-

and value are those of Bowen,¹ to which reference has already been made, and the contributions of Manges and Farrell,¹¹ Ude,¹² Ashbury,¹³ and Sante.¹⁴ The papers of Jackson and Lee,¹⁵ Hearn and Clerf,¹⁶ and their associates, whose interest in atelectasis has been spurred on by its occurrences in connection with the insufflation of foreign bodies into the lung, have been most valuable. From the physiologists we have the early contributions of Yandell Henderson and Haggard.¹⁷ Specialists in tuberculosis who have contributed very valuable papers on this subject are Sewall,¹⁸ Farris,¹⁹ Habliston,²⁰ and Coghlan.²¹

This brief review of contributors, of course, embraces only those whose contributions have been very recent. The foundations of our knowledge of atelectasis go back almost a century. It is a curious and interesting fact that as our knowledge of

atelectasis has grown the subject has been repeatedly presented to us from a new viewpoint. This is shown most dramatically by the recent steps in our knowledge during the past decade. I refer to the relation which atelectasis bears to foreign bodies in the lung; to the relation which atelectasis bears to postoperative pneumonia; and, finally, to the theory that atelectasis is only a preliminary step in the disease which we have known for so long as lobar pneumonia, and that lobar pneumonia is in fact a pneumococcic (generally) infection of the already atelectatic lung.

It might simplify the matter if we reviewed briefly those historical steps which have brought us to our knowledge of the subject at the present time. In the interesting historical resume' contained in Bowen's¹ paper the fact is brought out that we had some knowledge of atelectasis as far back as 1811, but that this knowledge was very imperfect and awaited some experimental work to identify the condition and to arouse speculation as to the means which brought about collapse of the lung. These steps then briefly might be numbered as follows:

1. The work of Mendelssohn²² and Traube²³ in 1845 and 1846, who were the first observers to produce collapse of the lung by the introduction of foreign bodies into the bronchi. These foreign bodies used at the time were shot, paper, gum and Arabic paste. These interesting experiments remained in the air, as it were, and the true significance of their value was not appreciated until the passage of another generation.

2. The second step in our knowledge is embraced in the contributions of Sir William Gairdner,²⁴ who, while attached to

10. Gwyn, N. B.: The clinical side of the condition spoken of as massive collapse of lung, *Tr. Am. Phys.* 38: 410-429, '23.

11. Manges, W. F., and Farrell, J. T., Jr.: Significance of roentgenologic changes in differential diagnosis of atelectasis, *Am. J. Roentgenol.* 30: 429-442, Oct. '33.

12. Ude, W. H.: Roentgenologic studies in early lobar pneumonia, *Am. J. Roentgenol.* 26: 691-695, Nov. '31.

13. Ashbury, H. E.: Recurrent massive collapse of lung due to benign intrabronchial tumor, *Am. J. Roentgenol.* 21: 452-459, May '29.

14. Sante, L. R.: Massive collapse of lung, *Radiology*, 8: 1-13, Jan. '27; also *J. A. M. A.* 88: 1539-1542, May 14, '27.

15. Jackson, C., and Lee, W. E.: Acute massive collapse of lungs; discussion of its mechanism and of its relation to foreign bodies in bronchi and postoperative complications, *Ann. Surg.* 82: 364-389, Sept. '25.

16. Hearn, W. P., and Clerf, L. H.: Postoperative massive collapse of lung; report of bronchoscopic observations, *Ann. Surg.* 85: 54-60, Jan. '27.

17. Henderson, Y., and Haggard, H. W.: The treatment of carbon monoxide asphyxia by means of oxygen plus carbon dioxide inhalation, *J. A. M. A.* 79: 1137, Sept. 30, '22.; Henderson, Y., Haggard, H. W., Coryllos, P. N., and Birnbaum, G. L.: Treatment of pneumonia by inhalation of carbon dioxide; relief of atelectasis, *Arch. Int. Med.* 45: 72-91, Jan. '30.

18. Sewall, H.: Pulmonary atelectasis as source of confusion in physical examination of chest, *Am. Rev. Tuberc.* 4: 811, Jan. '21.

19. Farris, H. A.: Atelectasis of lung, *Canad. M. A. J.* 15: 808-815, Aug. '25.

20. Habliston, C. C.: Intrapleural pressure in massive collapse of lung, with report of cases, *Am. J. M. Sc.* 176: 830-837, Dec. '28.

21. Coghlan, J. J.: Treatment of acute lobar pneumonia by artificial pneumothorax, *Lancet* 1: 13-17, Jan. 2, '32.

22. Mendelssohn, A.: Der mechanismus der respiration und cirkulation, etc., B. Behrs, Berlin, 177 et seq., 1845.

23. Traube, L.: Beitr. x. exper. Path. u. Physiol. 184 et seq., 1846.

24. Gairdner, W. T.: On the pathologic states of the lung connected with bronchitis and bronchial obstruction, *J. M. Sc.* 9: 122-230, 1850; 12: 440, 1851; 13: 238, 1851.; Gairdner, W. T.: On Collapse of lung and its results, considered in relation to diagnosis and treatment of certain diseases of chest, *Brit. & For. M., Chir. Rev., Lond.* 13: 207-224, 1854.

the Pathological Department of the University of Edinburgh, contributed two notable papers on the subject, which established massive collapse of the lung on a firm physiologic and clinical basis. As Bowen¹ remarked in his paper, much of what Gairdner said remains true to the present time; little could be added to it and little removed from it. He seemed to have been impressed with the theory that it was produced by plugging of the bronchus. Outside of that, his statements are thoroughly in accord with our views on the subject at the present time. These contributions were made in 1850 and 1854. Following this came the very valuable suggestion of Bartels:²⁵ that it was the blood circulating in the lung which absorbed the air.

3. The experimental work of Lichtheim²⁶ in 1879, who repeated the work of Mendelssohn²² and Traube,²³ went a step further, and proved, experimentally, for the first time that if the bronchus and the blood vessel of the lung were ligated simultaneously that atelectasis did not take place, and that if the bronchus were plugged and the blood stream left intact atelectasis did take place. This proved to his satisfaction that the air remaining in the vesicles of the lung was removed by the circulating blood—a fact which has been proved repeatedly since Lichtheim's day. Lichtheim also was able to make some estimations of the gaseous content in the air vesicles of the involved lung.

4. In 1890 Pasteur²⁷ published his first paper on massive atelectasis in connection with a series of fatalities in children from diphtheria, and suggested the neurogenic or neuropathic idea as to its causation in opposition to the theory that atelectasis was invariably brought about by plugging

of the bronchus. Pasteur returned to the subject again nearly twenty years later, and his work for the first time firmly attached massive atelectasis to the subject of postoperative pneumonia. His two contributions in 1910 and 1911, one of them the annual oration before the Medical Society of London, established the close connection or identity of these two conditions in a way never to be forgotten.

5. The contributions of Yandell Henderson and Haggard,¹⁷ with the suggestion of treatment by oxygen and carbon dioxide, and with the extension of this idea not only to atelectasis but to postoperative pneumonia as well. These contributors were the prime movers in the treatment of lobar pneumonia by carbon dioxide and oxygen in accordance with the theory that obstructions in the bronchus, such as thick, inspissated collections of mucus, were removed thereby, and ingress and egress of air into the involved lung was brought about.

6. The work of Elliott and Dingley,²⁸ who reviewed a series of cases of postoperative atelectasis, and who made a number of interesting and significant x-ray pictures, establishing the fact that from the radiologic viewpoint the mediastinal contents and heart were drawn toward the involved side. They advanced the idea that this movement of the mediastinal contents was in direct response to the creation of the increased negative pressure on the involved side by the absorption of the air in the atelectatic lung by the blood stream. They suggested the introduction of oxygen as an agent to restore the proper pressure.

7. The consideration of the subject from the bronchoscopic viewpoint, when atelectasis was found in connection with the aspiration of foreign bodies. Leaders in this work were Chevalier Jackson,¹⁵ Clerf,¹⁶ Lee¹⁵ and others.

8. Contributions of Elkin,⁸ Farris,¹⁹ and Habliston.²⁰ Since it seemed to have been fairly well established that the negative pressure was increased in the involved side; that this negative pressure produced varying degrees of elevation of the diaphragmatic leaf, and traction of the heart and mediastinal contents toward the atelectatic

25. Bartels. Beobachtungen uber die hautige braune, *Deutsches Arch. f. klin. Med.* 2: 367-452, 1867.

26. Lichtheim, L.: Versuche uber lungenatelectase, *Arch. f. exper. Path. u. Pharmakol.* 10: 54-100, 1878-79.

27. Pasteur, W.: Respiratory paralysis after diphtheria as cause of pulmonary complications, with suggestions as to treatment, *Am. J. M. Sc.* 100: 242-257, 1890.; Pasteur, W.: Massive collapse of lung, *Lancet* 2: 1351-1355, '08.; Pasteur, W.: Active lobar collapse of lung after abdominal operations, *Lancet* 2: 1080-1083, '10.; Pasteur, W.: The annual oration on postoperative lung complications, *Lancet* 1: 1329-1334, '11.

28. Elliott, T. R., and Dingley, L. A.: Massive collapse of lungs following abdominal operations, *Lancet* 1: 1305-1309, '14.

lung, it appears only natural to suppose that the idea would occur to some observer to attempt some measurement of what was obviously a greatly increased negative intrathoracic pressure on the involved side. This was first done, so far as we are aware, by Farris,¹⁹ who found the intrathoracic negative pressure to be increased. He also introduced a needle into the pleural cavity on the contra-lateral side and found the negative pressure normal. This work was repeated by Elkins.⁸ Farris¹⁹ not only measured the pressure on the involved side but corrected it by the introduction of air. As far back as 1914 Elliott and Dingley²⁸ had suggested the use of oxygen in the pleural cavity on the involved side to restore the pressure to normal, with resulting restoration of the mediastinal contents to their proper place. This suggestion was repeated by Elkin,⁸ but was first carried out we believe by Farris.¹⁹ Farris¹⁹ is the protagonist of the idea that increased negative pressures in pleural cavities, coincident with massive atelectasis, should be remedied by the introduction of air. In the course of his paper, which is a very interesting one, he says that were atelectatic patients (and we might say that every argument he uses for the correction of the increased negative pressure in atelectasis might be used for the correction of the increased negative pressure in lobar pneumonia) under the care of specialists in tuberculosis, who are accustomed to the use of pneumothorax as a remedial agent, the use of this agent would have become generally instead of only infrequently adopted. He is of the opinion that it is not used more frequently because those treating these patients are only ill-acquainted with its use. A few years later Habliston²⁰ used the same methods in treating a group of cases of massive collapse with apparently beneficial results. He found the negative pressure tremendously increased and believed it was a potent factor in the production of many of the symptoms from which the patient suffered, an opinion in which Ashbury¹³ concurred. We will return to this subject later.

9. At about this time began to appear in the literature the work of Coryllos and Birnbaum,² and contributions from these authors have continued almost up to the present. Until the work of these two men

appeared all observers and authors apparently searched diligently for methods by which massive atelectasis could be distinguished from lobar pneumonia, and the literature on the subject is studded by various formulae by which these two diseases could be differentiated. Coryllos and Birnbaum² for the first time boldly advanced the idea that these two diseases are only steps in the same process. The volume of their work and the variety of their experiments is so large that it constitutes almost a world in itself. They repeated and amplified the work of Mendelssohn²² and Traube²³ and Lichtheim.²⁶ By various ingenious devices they were able to corroborate the latter's idea that the blood supply of the lung must remain intact if atelectasis were to ensue following the plugging of the bronchus. They were also able to introduce into the depths of the involved side instruments capable of removing the air from the vesicles of the lung and submitting it to analysis. They are believers in the idea that massive atelectasis is brought about by the plugging of the bronchus.

10. Within the past two years a number of contributions have come to us in this field, which have considered as their main objective the treatment of lobar pneumonia by therapeutic pneumothorax. Lieberman and Leopold²⁹ state that this procedure had been used on the Continent since 1921, when Friedman³⁰ first reported seven patients so treated that year. A number of others followed his example, but it was the publication of Coghlan's²¹ paper in 1932 which stimulated interest in this subject, particularly among English-speaking physicians. Since the publication of Coghlan's paper, a number of papers have been written along the same line. Among these might be mentioned the papers of Li,³¹ Anderson,³² Moorman,³³ and Viswan-

29. Lieberman, L. M., and Leopold, S. S.: Therapeutic pneumothorax in experimental lobar pneumonia in dogs, *Am. J. M. Sc.* 187: 315, No. 3, '34.

30. Friedman, U.: *Deut. med. Wchnschr.*, 47: 443, '21.

31. Li, K. H.: Artificial pneumothorax treatment for lobar pneumonia; report of 6 cases, *Chinese M. J.* 46: 886-893, Sept. '32.

32. Anderson, H. G.: *Ibid.*, p. 769, Aug. '32.

33. Moorman, L. J.: Artificial pneumothorax in treatment of pneumonia, *South. M. J.* 27: 233-237, March '34.

athan.³⁴ Lieberman and Leopold²⁹ state that the number of published cases of lobar pneumonia treated by pneumothorax up to the time their article went to press totaled fifty, the ages ranging from six weeks to sixty-two years. Forty-one cases might be regarded as the treatment of true pneumonia, the other nine cases being regarded as treatment of post-pneumonic complications. The average number of treatments in each case was two, and the average amount of air injected with each treatment was 400 cc. in adults. Forty-seven patients recovered and three died. Five years have passed since the publication of Bowen's paper in which he said that he mentioned pneumothorax only to condemn it, a view which he shared in exactly the same words by Brunn and Brill³ and by many other workers on the question of atelectasis. Yet in that short space of time therapeutic pneumothorax has demonstrated that whatever its merits may be in the next five years it will probably receive a trial sufficient in extent to demonstrate its usefulness in atelectasis and pneumonia.

ETIOLOGY

Charles Habliston,²⁰ in discussing this phase of the disease, gives the following conditions in which atelectasis is found:

(a) In obstruction of the bronchus from within: foreign body, intrabronchial tumor, mucus plugs, excessive secretions.

(b) In obstruction of the bronchus from without: pressure of aneurysm, mediastinal tumor, pericardial effusion.

(c) In obstruction of the bronchus by chronic inflammatory pulmonary disease: tuberculosis.

(d) As a complication of trauma, or operative procedures.

(e) As a complication of severe infections grossly involving the nervous system, reported in postdiphtheritic paralysis, acute meningitis, and acute poliomyelitis.

He also quotes various theories which define excellently the neurogenic idea, listing them under several heads:

1. Vasomotor, with dilatation of vessels and stasis, producing bronchial obstruction by outpouring of secretions.

2. As being inhibition or paralysis of the bronchodilator fibers of the vagus, with overactivity of the bronchoconstrictors.

3. As being reflex paralysis of the diaphragm, either alone, or associated with excessive secretions.

His first classification accounts for a considerable number of the cases of atelectasis which we see, but it is the postoperative case which has aroused the greatest amount of discussion as to its etiology.

Another type of case—if we might so call it—the idiopathic type of atelectasis—is that type which is believed by Coryllos and Birnbaum and their supporters to merge into the disease known as lobar pneumonia.

These last two types of this disease are those in regard to which the greatest amount of discussion has arisen. The idea of bronchial plugging with inspissated mucus probably owes its foundation to the work of Sir William Gairdner.²⁴ Broadly speaking, contributors to our knowledge on this subject are divided into two main classes: those who believe in the theory of bronchial obstruction and those who do not. Those who do not believe in this as the main etiologic factor have been forced to fall back upon theories and explanations variously expressed, all having connection with the nervous system, and on analysis most of these types of explanations have been found to be incapable of proof. It probably would not be too much to say that many of these explanations dodge the issue—a polite way of saying that the observers do not know the cause of atelectasis yet do not believe that bronchial occlusion is the common cause.

Compared to this indefinite mass of expressed opinion is a clear-cut statement of Coryllos and Birnbaum² and their supporters to the effect that massive atelectasis is produced, in the vast majority of instances at least, by plugging of a main bronchus, most likely by inspissated mucus.

The work of Coryllos and Birnbaum² no doubt has added a tremendous amount of impetus to the theory of bronchial plugging as the main causative factor in atelectasis. They point to the fact that they have been able to produce the condition by this means, and no one else has ever been able to produce it by any other.

34. Viswanathan, R.: Treatment of pneumonia by artificial pneumothorax, *Lancet*, Oct. 1, '32.

The only "fly in the ointment," however, has been the fact that while it is frankly admitted that it can be produced in this way, the corollary of this statement, that it is produced in this way in a majority of instances, has been only accepted by a portion of the profession.

One would judge—reading over recent literature—that the portion of the profession who agree with Coryllos and Birnbaum² is becoming smaller instead of becoming larger. Several facts have entered into this change in public opinion, which has been subtle and rather slow. As long as massive atelectasis was confined to postoperative instances, and as long as many of these postoperative cases dated from an inhalation anaesthetic, it was not difficult to convince the audience that plugs of mucus followed ether inhalations, and were a very frequent cause of the resulting disaster. But when it began to be observed that massive atelectasis followed other types of anesthesia—local and spinal—and followed no anaesthetic at all, confidence in this theory began to wane.

Another reason for inciting disbelief in this theory is the fact that many accurate and close observers of atelectasis state they have been unable to find the mucus plugs postmortem, which were supposed to be responsible for the disease. Brunn and Brill³ expressed in a few words probably what might be regarded as a reasonable middle of the road attitude toward this controversial subject.

"Reviewing all the evidence presented as to the etiology of postoperative atelectasis, we must say that at present bronchial obstruction is the most important single factor we know, but we cannot say that it is the only factor, or the sole factor."

Bradford,⁴ after a long experience, makes the observation that he has yet to see a case of lung collapse in head injuries or injuries to the upper extremities. Brunn and Brill³ quote a personal communication from Naffziger to the effect that practically no case of atelectasis occurred following a cranial operation, and the neural surgeon is not troubled with this complication. They also quote Schaak to the effect that massive atelectasis, postoperative, has an incidence four times as great among patients kept in the hospital two weeks before operation, as

it does with a group of patients kept in the hospital only two or three days.

It seems to be a matter of common observation that postoperative atelectasis occurs with about an equal amount of frequency regardless of the type of anesthetic used, but occurs much more frequently and more seriously in operations upon the upper abdomen and around the gallbladder and diaphragm. Judging from the work of King,³⁵ it occurs much more frequently among men than women, and the mortality rate in massive atelectasis following major surgery in the upper abdomen is higher in the male sex than in the female sex.

Bowen¹ is of the opinion that the use of morphine before operation is conducive to the development of atelectasis, as it tends to abolish the cough reflex, which he quotes Jackson as constituting the "watch dog" of the respiratory system.

Climatic Conditions: It might be of interest to record the experiences of the author while working in the Surgical Section of the Colon Hospital in the Canal Zone from 1905 to 1910. Despite the fact that there was a large surgical service attached to the hospital at that time—both elective and traumatic—the writer fails to remember a single case of serious postoperative pulmonary complication. In talking the matter over with Dr. Lloyd Noland, who was in charge of this service for nine years, he expressed the same opinion. This, although the operating pavilion was at one end of the hospital and the patients were taken down on stretchers and carried back the same way (all those whose quarters were on the second floor being carried up the stairway by man-power); and despite all these movements on wind-swept porches, postoperative pneumonia—as it would have been called in these days—was unknown, just as idiopathic lobar pneumonia among white people was infrequent also. Respiratory diseases tend to become milder as we approach the equator; serious attacks of acute pulmonary disease are infrequent, if crowding is not present; and the common cold is almost unknown.

35. King, D. S.: Postoperative pulmonary complications; statistical study based on 2 years' personal observation, Surg. Gynec. & Obst. 56: 43-50, Jan. '33.; King, D. S.: Postoperative pulmonary complications; carbon dioxide as preventive in controlled series, J. A. M. A. 100: 21-26, Jan. 7, '33.

SYMPTOMS AND ONSET

The onset of the disease is sudden; it is frequently accompanied by a chill, an abrupt rise in temperature, and an increase in cardiac rate, respiratory rate and leukocyte count. This is the history whether the atelectasis is postoperative or whether it is the so-called idiopathic type which develops later into lobar pneumonia.

We have never been able to discover in the first twenty-four or forty-eight hours of the disease any signs which would inform us whether the atelectasis is to suddenly terminate itself without any known cause, or whether it is to continue on into longer sustained consolidations. The signs and symptoms and physical findings in their waxings and wanings obey no law that is known to us at the present time.

PHYSICAL FINDINGS

Owing to the fact that the involved side has been put out of commission as an air-bearing structure, the respiratory movements on the involved side are always diminished to a greater or lesser extent. Early in the disease there is little if any difference in the percussion note, but observers—when the chest is examined with a stethoscope—find what we would expect to find: diminution merging toward absence of the normal respiratory note over the involved area. The findings on the uninvolved side are more definite than those on the involved side; and the findings here are such as we find with an emphysematous lung. It is this silence on the involved side and evidence of increased function on the uninvolved side which has led so many of us in the past to diagnose an impending pneumonia in the wrong lung.

It is interesting to recall in the discussion of Faulkner's⁴ paper on "Internal Drainage of the Lung" Clerf stated that in the Lumleian lectures given by Dr. McCrae that McCrae pointed out that in cases of bronchial obstruction by foreign bodies the physical signs worthy of notice were commonly elicited over the opposite lung and were always auscultatory in type.

Varying with the same factors which influence the radiologic picture, displacement of the mediastinal contents is frequently found. While this displacement may not be gross, it is detectable, we believe, in the majority of instances and should be sought

for. The extent of displacement depends upon the same factors which are outlined in our description from the radiological viewpoint. The younger the individual the greater the displacement is commonly found to be the case.

Since we have become aware of the variations in intrathoracic pressure, which accompany atelectasis, the determination of the position of the mediastinal contents has taken on a new importance; and if we follow Sewall's¹⁸ advice and "Think Atelectasis" with every chest that we examine, we will be able to determine displacement of the mediastinal contents in a very considerable portion of our cases.

The underlying phenomenon which accompanies atelectasis in all instances is, of course, the increased negative intrapleural pressure; and this displays itself in signs other than retardation of the respiratory movement on the involved side, elevation of the phrenic leaf, and displacement of the mediastinal contents toward the involved side. It seems to us more frequently of late, as we have known of the tremendously increased negative pressure on the involved side, we have been able to see evidences of it in the chest of the individual suffering from atelectasis. These evidences of increased negative pressure will, of course, vary with the nutritional and trophic condition of the chest wall, with the age of the patient, the muscular development, degree of obesity, distention of the abdomen, and other factors; but certain evidences of it are always present.

These evidences of increased negative pressure on the involved side display themselves with each breath that the individual draws. As the ribs are pulled outward by the force of the intercostal muscles, the spaces between the ribs are drawn sharply downward inward by the increased negative pressure, so that we have a sucking-in of the soft tissues of the chest with each effort of the individual to inhale. Not only is this finding very evident in the intercostal spaces, but with children and lean individuals it is very apparent in the supraclavicular spaces on the involved side. Here also with each intake of air the tissues are drawn sharply below the level of the clavicle. It is unfortunate at the present time that we have no knowledge of how long this increased negative pressure persists in cases

of lobar pneumonia, but we suspect that it persists well into the period of consolidation of the lung—possibly longer—and may indeed increase as we approach a fatal issue. In any event, within the past year we have had the opportunity to note on several occasions, when dealing with patients who ultimately died with lobar pneumonia, that the evidence of tremendously increased negative pressure on the involved side shown by the sucking-in of the interspaces and the depression of the tissues above the clavicle persisted almost up to the last breath that the individual drew.

ABDOMINAL SYMPTOMS

Abdominal distention is a very common finding. A decade ago observers attributed the abdominal findings in pneumonia to all sorts of reasons, which seem to us now rather fanciful. Hiccough, uncontrollable distention, and ileus are found to a greater or lesser extent in many cases of pneumonia, and often early in the disease.

We believe Farris¹⁹ was the first person to advance the idea that in atelectasis the marked abdominal symptoms were due to the fact that tremendous degrees of negative pressure had been exerted upon one diaphragmatic leaf; that with the enforced elevation of the diaphragm on the involved side various viscera (the stomach if the left diaphragm happened to be involved) were sucked up to a level in the body where they were never intended to function, with resulting undue traction upon their mesenteric attachments. Many of the disabilities incurred in the abdominal cavity we believe are due to this traction exerted on the hollow viscera. Farris¹⁹ also first called attention to the fact that these symptoms were liable to be much more marked if the left lung were involved, for the resulting increased negative pressure in the left pleural cavity could exert a greater degree of traction on the abdominal viscera than would be the case if the right side were involved, in which instance the liver acted as a coffer-dam. Farris was of the opinion that restoration of the normal negative pressure in the pleura of the involved side was called for by the appearance of these abdominal symptoms, if for no other reason at all.

It would be of something more than speculative interest, I am sure, to attempt to

formulate our impressions as to the changes in intra-abdominal pressure which would follow greatly increased changes in intrathoracic pressure. We have every reason to suppose that if we have increased negative intrathoracic pressure up to any such figure, as was found for example by Habliston²⁰ (in excess of 400 mm. measured in a water manometer), that this increased intrathoracic pressure would be accompanied by increased negative intra-abdominal pressure also. Just how much of the abdominal distention is due to air insufflated into the large intestine through the rectum by this mechanical factor is, of course, unknown, but the distentions which accompany atelectasis and lobar pneumonia are at times extremely stubborn and very resistant to treatment, and we ourselves are strongly of the opinion that it is due to the fact that the condition will recur (owing to underlying mechanical causes) just as long as the increased negative pressure exists in the thoracic cavity of the individual under consideration.

RADIOLOGIC FINDINGS

It seems to have been taken for granted by the commentators in this disease that we will invariably find from the radiologic viewpoint a certain definite set of changes. This is not the case. Our findings will depend upon many factors, a number of which might be mentioned.

1. *The Amount of Lung Involved.* The coincident amount of rise in increased negative pressure on the involved side. The larger the involvement, presumably, the higher the negative pressure.

2. *The Age of the Patient.* Mediastinal contents of the young, as is well known, are much more easily moved than is the case later on in life. Any one with much radiologic experience, who has examined lateral views of the mediastinum in individuals in the fifth, sixth, and seventh decades of life, has had occasion to observe that important changes have taken place in the chest with the passage of time, and that the posterior mediastinal space for example, which in youth is apparently unoccupied, constitutes a supplementary space to be filled in as various minor or major involvements of the chest contents occur to the individual. Later in life this space becomes

filled with scars or the remains of immunologic struggles or what not, and becomes definitely fixed in one position in the chest.

The fact has been widely recognized, as we may observe from the paper of Joannides,³⁶ in which he speaks of the type of mediastinum which is moved easily in the chest. His statement follows: "This is particularly true in younger individuals and especially those that show little or no tracheobronchial lymph-node involvement."

Traction sufficiently powerful to move this mass of mediastinal contents, including the heart, rigid aorta, infiltrated bronchial trunks, glandular masses, calcified cartilages, etc., must be very powerful indeed; and it is probable that traction without movement of the mediastinal contents may be a greater strain upon the resources of the individual than that same amount of traction would have applied to freely movable organic masses. So that in atelectasis occurring in elderly people we are not at all surprised that there is little if any demonstrable lateral movement of the mediastinal mass.

This matter is gone into a little in detail because the author has seen some very excellent contributions on this subject of atelectasis with x-ray plates supposed to demonstrate lateral movement of the mediastinal contents; but on close examination it is determined by the relative position of fixed points in the skeletal structure, such as the inner heads of the clavicles and the spinous processes of the vertebrae, that these pictures were not taken in such a way as to truthfully demonstrate lateral movement of the mediastinal contents and that the apparent malposition of the mediastinal contents is simply an error in technique.

3. *Lateral Movement Varying With the Side Involved.* Manges and Farrell¹¹ are convinced that the degree of displacement of the mediastinal contents is determined by the side involved and by the feasibility of the mediastinal structures. They believe that the displacement is more marked if the right lung is involved than if the left lung is involved. The reason for this, of course, we do not know. It has commonly been taken for granted that the right lung

does the major portion of the respiratory work and is more powerful than its mate. Whether it is due to the fact that collapse of the right lung may produce higher negative intrapleural pressures than collapse of the left lung we do not know. In fact we know very little about this subject. It is possible, however, that this circumstance may create the difference referred to by Manges and Farrell.¹¹

4. *Elevation of the Diaphragmatic Leaf.* This finding is more easily demonstrated in left-sided lesions than in right. The traction on the left phrenic leaf creates a rise in the structure which is plainly seen in the antero-posterior picture of the chest. The fact that there is very little below the phrenic leaf on this side to interfere with the passage of the x-ray makes the estimation of its position relative to the long axis of the body comparatively easy, but the matter is more complicated when we come to estimate the position of the diaphragm overlying the liver. We are constantly impressed with the fact that the position of the right phrenic leaf is open to wide variation in normal individuals, a variation in position in which we believe the size and shape of the liver often play a definite part, in which cases the question of atelectasis does not enter. If we presume that the elevation of the diaphragmatic leaf in atelectasis is due to suction from above, the difficulties of aspirating a mass such as the liver even a very small distance into the chest cavity must be apparent to all.

5. *Narrowing of the Rib Spaces on the Involved Side.* We must admit that we have seen very few, if any, instances of this condition. We have several pictures of atelectatic patients, postoperative, who show the condition very plainly, but we also have pictures of these individuals made both before and after the atelectatic adventure; and the narrowing of the intercostal spaces was apparent long before they ever had atelectasis—in other words a mere finding of a coincidence. So it is not at all surprising, considering the individual anatomic characteristics of the patient, the general intra-abdominal distention which takes place after an operation, and the difficulties involved in getting a perfectly adjusted position for the x-ray plate in an individual who is desperately sick in bed, that several or all of the secondary radio-

36. Joannides, M.: The displacement of intrathoracic viscera resulting from pathologic processes in lung, *Am. Rev. Tuberc.* 29: 313-328.

logic evidences of atelectasis may be absent.

6. *Infiltration of the Involved Lung.* Regarding the infiltration which takes place in the lungs in atelectasis, we have never been able to describe this with any accuracy as indicative of any special form of disease. A few years ago before the subject of atelectasis was commonly considered, we grouped all those incidents as pneumonia, postoperative pneumonia, etc., and we have seen very little in the interval to make us change our minds. An infiltration of the lung is an infiltration, whether it is due to atelectasis or pneumonia. We have been able to find few distinguishing marks between the two conditions. We share the views of Ude¹² as to the manner in which the infiltration extends.

7. *Emphysema of the Contra-Lateral Lung.* The final radiologic finding which is apparent early in the disease—very likely the earliest of all—is the compensatory emphysema of the uninvolved lung and the descent of the diaphragmatic leaf on that side. The clearness of the uninvolved side in the x-ray picture is at times startling, and the importance of this finding has been in all probability overlooked.

TREATMENT

Trends in treatment have followed the two main pathways we found existing in the consideration of the etiology of atelectasis.

First, treatment which depends for its efficiency upon the presumption that the treatment relieves plugging of one of the main air vessels of the lung.

Second, treatment which directs its efforts toward the restoration of the normal amount of negative intrathoracic pressure in the involved side.

In atelectasis, which followed the inhalation of a foreign body, removal of the foreign body was the only logical form of treatment to be pursued; and it is possible that the tendency which has been existing for ten years or more toward the treatment of all types of atelectasis by various forms of suction and inhalations of gaseous substances—designed to loosen up the mucus deposits—had its incipency following the observation of the work of men using the bronchoscope. So much of the earlier work in atelectasis and some of the

most spectacular results in the treatment of atelectasis, such as for example the relief of the atelectatic lung by the removal of a foreign body, depended for their effects upon the freeing of one of the great air trunks, that the idea embraced in this treatment has rather, unfortunately, we think, cast its shadow over all forms of treatment of atelectasis.

It was only a short time before the application of the idea that the inhalation of certain gases could prevent the occurrence of atelectasis by hyperventilation of the lung until this same idea was applied to the treatment of atelectasis, and, frankly, shortly to the treatment of pneumonia. Several contributions have made this viewpoint evident. The work of Henderson, et al,¹⁷ concerns itself with the treatment of a number of cases of experimental pneumonia produced in dogs by the inhalation of carbon dioxide and oxygen, in which the results were believed to be gratifying; and the hope was expressed in this communication that if "medical pneumonia" were treated early enough, the probability existed that the inhalation of carbon dioxide and oxygen would produce the same gratifying results which the authors felt had been demonstrated in the treatment of postoperative atelectasis.

The method of inhalation of carbon dioxide and oxygen mixtures has become quite widely used both in the surgical and medical clinics throughout this country. The advocates of this type of therapy believe that it is the deep breathing induced by this mixture and the specific action of carbon dioxide which causes the ultimate dislodgment of the mucus plugs which were presumed to cause the atelectasis and the resulting pneumonia.

It is unfortunate that up to the present time no statistics have been found available which would tend to prove or disprove this theory. It would seem to the author that much of it is founded upon a presumption, the presumption being that the pneumonia is produced by plugging of the bronchus, a presumption which still remains questionable in the minds of many.

Allison³⁷ has contributed several interesting contributions along the same line.

37. Allison, J. F.: Carbon dioxide in treatment of acute bronchitis and early pneumonia, South. M. J. 25: 386-389, April '32.

He believes that carbon dioxide in the treatment of bronchitis and early pneumonia is a very favorable adjunct to other forms of treatment. It was suggested by the author also that it is the deep breathing which diathermia induces, due to the fact that it removes pleural pain, which may explain some of the results which have been noted following the treatment of early cases with high frequency currents.

The other type of treatment which has come only recently into use is that form of treatment first suggested by Elliott and Dingley,²⁸ and carried out by Farris,¹⁹ Habliston,²⁰ Moorman,³³ Coghlan,²¹ Friedman,³⁰ David,³⁸ Taylor,³⁹ Li,³¹ Anderson,³² and Terrell,⁴⁰ which might be defined as a method of restoring normal pressure in the involved pleural cavity. This has been commonly done by the production of pneumothorax on the side on which the atelectasis has occurred.

The progress of opinion on the whole subject has been marked, and changes in opinion, as our knowledge of the subject has grown, have kept pace with our progress. In the splendid paper of Bowen,¹ to which we have frequently referred in this contribution, reference is made to the question of artificial pneumothorax. He himself is opposed to it, and he quotes Bradford,⁹ Mason,⁴⁰ and Gwyn,¹⁰ as against what he terms "thorocotomy," "misdirected thoracentesis," and "unfortunate puncturing." Pneumothorax, says Bowen, is mentioned here only to condemn it.

Brunn and Brill³ quote verbatim the remark which Bowen made about pneumothorax, and make the following significant statement:

"While it is true that this procedure may allow the displaced mediastinum to return to its normal position due to the relief of the increased intrapleural (negative) tension, it does nothing to relieve the pulmonary pathology as we understand it."

Despite this condemnation, which seems to have been widely held as recently as four or five years ago, the method of inducing artificial pneumothorax has stubbornly pushed its way to the front, until at the present day it is beginning to assume a prominent position in our scheme of treatment; and promises, if recent developments are any indication of which way the tide is flowing, to come into wide popularity. It is possibly a reflection of the extent to which authority governs medical procedures that the method up to the last few years has been so little used. The suggestion of first using some gas, such as oxygen, for the purpose of restoring normal negative pressure, and thus release the mediastinal contents from forces of undue suction on the involved side, was first made by Elliott and Dingley²⁸ in 1914. Lieberman and Leopold²⁹ informed us that the procedure has been used on the continent of Europe since 1921, when Friedman³⁰ reported his series of cases, but it seems to have gained very little popularity in the English-speaking world. Farris,¹⁹ we believe, was the first physician in North America to introduce air into the pleural cavity for the relief of atelectasis, although the identity of atelectasis and pneumonia had not even been suggested up to that time.

Farris not only estimated the pressure on the involved side but attempted to correct it with the introduction of air. Elkin⁸ also later estimated the pleural pressure in the involved side in a series of cases of atelectasis, and in the contra-lateral side as well. In 1928 Charles Habliston²⁰ followed the work of these two men with his brilliant contribution on "Intrapleural Pressure in Massive Collapse of the Lung." One of the cases of Habliston was afterwards elaborated by Ashbury.¹³

It is due to the work of these men in this country, forming a very small group, that the question of artificial pneumothorax in atelectasis and pneumonia has been kept alive. If we turn back a moment to the quotation we derived from Brunn and Brill³ (that the introduction of air does not affect the underlying pathology of the disease as it is) we might draw a text from this and ask, "What is the underlying pathology of the disease?"

For a century or more the medical profession has concentrated its attention on the

38. David, O.: *Ibid.*, p. 802.

39. Taylor, A. B.: Use of artificial pneumothorax in treatment of pleurisy in pneumonia, *Practitioner* 127: 389-396, Sept. '31.

40. Mason, R. L.: Massive atelectasis, *S. Clin. N. Amer.* 6: 739-746, 1926.

41. Terrell, E. E., Robertson, O. H., and Coggeshall, L. T.: Experimental pneumococcus lobar pneumonia in dog; method of production and course of disease, *J. Clin. Investigation* 12: 393-432, March '33.

lung which shows the signs of positive involvement. It was presumed that from this lung came the various lethal consequences which produced death in the individual. In pneumonia, due to the enormous amount of bacteriologic and serologic work which has been done, it has been classed solely as an immunologic problem. Certain rather disquieting circumstances are arising which cast some doubt upon the authenticity of our beliefs. Wittingly or unwittingly, the protagonists of the treatment of pneumonia, by the production of artificial pneumothorax, are directing our attention toward what was presumed to be the uninvolved lung.

As much as six years ago both Hablison and Ashbury in unmistakable language called attention to the mechanical factors which effect circulation in the involved and uninvolved side.

Hablison²⁰ said, "So great may this suction be, in one of our cases varying between -25 and -32 mm. of mercury, or 337 and 432 mm. of water, that cyanosis and dyspnea develop, we believe, because of extreme cardiac displacement and acute overdistention or emphysema of the contralateral lung. A vicious circle is now established—bronchial obstruction, absorption of alveolar air, collapse of the lung tissue, marked increase in intrapleural negative pressure, which in turn can only draw the obstructing medium more firmly and deeply into the bronchus. It was on this basis that Wilson suggested that partial pneumothorax, by lessening this negative pressure, or converting it into a positive one, might be of assistance in forcing out the obstructing agent."

Ashbury¹³ was even more incisive in his comment which is given at some length as follows: "As the alveolar air is more completely absorbed, the vacuum or suction normally present is so increased that displacement of the heart, mediastinum and diaphragm takes place toward the affected side of the pulmonary lesion. So great may this suction be, that acute emphysema of the good lung occurs; cyanosis and dyspnea develop because of the lessened gaseous exchange in the overdistended lung. A vicious circle is now established; bronchial obstruction, absorption of alveolar air, atelectasis of the lung tissue, increase in the

intrapleural negative pressure, which in turn can only draw the obstructing media more firmly into the bronchus, and the affected lung is drawn tightly against the chest wall."

It is a very interesting fact, and worthy of close scrutiny, I think, that Elliott and Dingley²⁸ in their contribution in 1914 state that several of Lichtheim's animals died from impairment of circulation due to overdistention of the uninvolved lung, and one or more of his animals died from sudden rupture of the contra-lateral lung due to tremendously increased negative pressure on the involved side.

Our attention is sharply directed by these circumstances toward a part of the human body, the so-called uninvolved side, which up to the present time has excited very little interest in our study of atelectasis. Certain parts of this subject, of course, are still awaiting additional information. Our figures regarding the increased negative pressure on the involved side are rather scanty, and we have very little, if any, knowledge as to how long this negative pressure exists; how it rises and falls; at what time it disappears; and what relation the pressure changes bear to the "crisis" in pneumonia.

In view of the very definite statements quoted from the papers of Hablison²⁰ and Ashbury,¹³ it was very interesting to note that in the contribution of Coghlan the reasons which he gave as appealing to him desirable for the institution of a therapeutic pneumothorax were as follows:

- (1) Separates the inflamed pleural surfaces, relieves pain, and allows of easy respiration.
- (2) Puts the inflamed lung at rest.
- (3) Limits the flow of blood through the pneumonic lung, thereby diminishing anoxemia, and interfering with the passage of toxins into the general circulation.

It will be noticed that the matter of restoration of normal intrapleural pressure is not even mentioned. The only indication that the intrapleural pressure was recorded during Coghlan's²¹ treatment of these patients is in a statement occurring in the record of the first case to the effect that the intrapleural pressure, as measured on a manometer, showed a wide and irregular

variation, the variation being from minus 40 to plus 40, and the author refers to this as quite a normal swing in this disease. The presumption is from the figures that this refers to measurement with a water manometer, but this is not specifically stated, and the presumption is also that when Coghlan refers to this minus 40 to plus 40 as being a normal variation in intrapleural pressure he refers to the cases as a group and not as a single case.

In reviewing the work of Lieberman and Leopold²⁹ no record was found of any measurement of intrapleural pressure with a manometer. In the two cases recorded by Moorman³³ the manometer readings were given from minus 1 to minus 3. Moorman³³ comments upon the fact that this finding surprised him considerably, as he thought he would find a higher negative reading.

All the authors, Moorman,³³ Lieberman and Leopold,²⁹ Coghlan,²¹ and others, who have commented upon the fact, are in agreement that the technique of therapeutic pneumothorax should be thoroughly worked out and understood by the operator before it is essayed upon patients suffering from lobar pneumonia.

It is very evident from the recent quotations and from the volume of material which is beginning to appear in the literature that we are on the eve of a new era in the treatment of lobar pneumonia. Whether this era will be purely temporary or not, of course, we do not know. But one is under the impression that the mechanical factors, which enter into the problem of the disease known as "lobar pneumonia," are going to be worked upon shortly, and no doubt before long we will have some clearer understanding of the matter.

Whether the immunologic problems, which have always been considered the very essence of the disease, are secondary matters affecting tissues already injured by undue pressures and tractions, we do not know, but it is evident that before long we are going to know a great deal more about it than we do today.

CONCLUSIONS

1. The history of atelectasis is reviewed, and an attempt made to allot the steps of our progress into different periods.

2. A review of the etiologic factors is made, with the opinion expressed that the trend is away from that of mechanical blockage of the bronchus, as the only cause or as the principal cause.

3. Comment is made upon the work of pioneers in this country and England, who kept alive interest in the variations in the intrapleural pressure, and made efforts to ascertain the extent of this factor. The work of Elliott and Dingley, Farris, Habliston and Elkin is referred to.

4. An attempt is made to define some of the reasons why in the radiologic study of this disease many of the findings commonly supposed to exist with it may be absent.

5. The recent highly important work of Coghlan, Lieberman and Leopold, Moorman, and others is reviewed; and the prediction is made that within the next year or two we will see an extensive application of therapeutic pneumothorax in the treatment of the disease known as lobar pneumonia.

6. We have derived the impression from the work of Elliott and Dingley, Habliston, Ashbury, and Farris that the importance of disturbed circulation in the uninvolved side has never been thoroughly appreciated by workers in this field. It is quite possible, and as noted earlier in the paper, there is evidence to sustain this point of view in the quotation which Elliott and Dingley made from Lichtheim's paper that this disturbance in circulation in what has been regarded as the uninvolved side may be a very important factor indeed. The spectacular results which follow the introduction of air in the atelectatic cases of Habliston and Farris may have been produced by restoring this circulatory factor to something approaching normal, just as surely as by restoration of the mediastinal contents to their normal position. We are very much inclined to believe that the early blood-tinged sputum, which is a common occurrence in atelectasis and pneumonia, comes from the overdistended uninvolved side rather than from the side in which the blockage has occurred. It is obvious to any one who reviews recent literature upon this subject that the mechanical problems encountered in the study of this disease will be shortly in process of solution.

CRANIO-CEREBRAL INJURIES AND
COMPLICATIONS

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Head injuries are becoming more and more a large factor in medicine due to the rapid increase in high speed transportation, congestion of traffic, and the speeding up of mass production by machinery. It is estimated that 10 to 15 per cent of admissions to city hospitals are head injuries. Since it is the general surgeon or the general practitioner who usually sees these patients first, it is very important, for proper treatment, that there be a true conception of the intracranial pathology. Further, the neurologist must accept responsibility for standardizing and perfecting, as nearly as possible, a scientific, routine treatment of head injuries. He, probably more than others, is able to understand and appreciate the immediate outcome, as well as anticipate eventual results and complications, inasmuch as many of these patients eventually fall into his hands as neuro-surgical or neurologic problems. At this juncture let us consider chiefly the subject of skull fracture, with its complications, and cerebral concussion.

Loss of consciousness, according to Wechsler, is present in 95 per cent of cases with skull fracture. Consciousness is regained within a few minutes if there is no tearing of the meninges, bleeding within the skull, or compression of the brain. However, if there is edema of the brain with marked compression, coma is profound and prolonged. Treatment should be directed, therefore, toward the relief of this pressure.

Simple linear fractures should be treated conservatively. Rest in bed is the primary consideration. The patient should be put to bed before any examination or procedure is attempted. The head of the bed should be slightly raised, some neurologists recommending raising the patient as nearly to the sitting position as is feasible during the acute stage. The patient should remain in bed for a variable period of time, according to the severity of the injury. If there is loss of consciousness for any appreciable length of time, he should remain in bed for at least six weeks. With fractures

of the base it has been recommended, and has proven an excellent practice, that the patient be kept prone in bed one hour for each two minutes of unconsciousness. This often requires a stay in bed of several months. When a long period of rest, as above recommended, is observed, the post-traumatic complications are not so severe nor so annoying. This is probably due to promotion of increased cerebral circulation, and therefore there is evidently a nearer approach to normal intracranial physiology during convalescence.

Any evidence of bleeding or leakage of cerebrospinal fluid from cranial orifices should be thoroughly examined. If such evidence is found, fracture through the base of the skull must be suspected, unless some external injury can account for the hemorrhage. Dr. S. R. Benedict of this City offered a valuable suggestion which the author now uses routinely in cases with leakage from the ear. He suggested that a pledget of cotton, saturated with a 10 per cent solution of argyrol be lightly inserted into the canal of the affected ear. This is changed as frequently as necessary without other manipulation. The cranium should be examined carefully for ecchymoses, hematomas, depressions or lacerations. This is best done after shaving the head. However, one must not rely on surface examination alone, since a hematoma often will give every indication of a deformity of the skull. This is a false impression that everyone, who has examined any appreciable number of recent head injuries, has experienced. Complete and thorough x-ray studies should be done as soon as practical.

Careful neurologic examination should be carried out as early as feasible. The optic fundi will show congestion, papilledema or hemorrhage in about 25 per cent of the cases. This is often the simplest method of determining the presence and persistence of increased intracranial pressure. Often we can follow the progress or recession of cerebral concussion by the changes in the fundi. Recently, one of my patients showed fully developed choked discs with hemorrhages when examined two hours after receiving a skull fracture.

The pupils should be examined for inequalities, and, if such are found, the injury is usually on the same side as the di-

lated pupil. One must bear in mind, however, that inequalities may have existed before the injury. All cranial nerves should be tested for palsies or paralyses which are usually suggestive of fracture at the base of the skull. Later, ecchymoses may appear about the eyes to further support the evidence of a basal fracture. A careful examination of the entire nervous system should be made for any localizing palsies, paralyses, or twitchings. Incontinence of urine and feces is usually evidence of injury to the frontal lobe, unless it can be accounted for by spinal cord or local injuries.

Wortis and Kennedy, reporting 1,000 cases of acute head injury from Bellevue Hospital, showed only 181 of the 1,000 cases failed to reveal evidence of involvement of the nervous system.

Spinal puncture is considered imperative as a diagnostic procedure, except in cases of compound fracture with a torn dura when there is danger of inviting infection through the open wound. We recommend puncture for reduction of the intracranial pressure, but this should be maintained by dehydration. This can be done by intravenous administration of dextrose in doses of 50-100 cc. of a 50 per cent solution once or twice a day, and by oral or rectal administration of magnesium sulphate solution. The dextrose not only relieves the pressure but is one of our best means of combating shock and should be given as soon as possible. On the Neuro-Surgical Service at Bellevue Hospital caffeine sodium benzoate is frequently used for instant relief of intracranial pressure. This preparation given intravenously to patients on the operating table, with a dangerously tense dura, showed that in two or three minutes the tension would be visibly relieved.

Recently, we saw, in consultation, a patient who had been in coma for over twelve hours following an accident. There were no localizing signs and no other evidence of head injury. He was given caffeine intravenously as a diagnostic procedure and immediately sat up in bed and answered questions about the accident.

No appreciable change has been noted in the respiratory or circulatory system after giving this drug intravenously. If pressure is to be relieved by spinal puncture the following should be observed:

Spinal puncture should be done with a manometer; if the reading is over 20 millimeters of mercury, the fluid should be allowed to escape in amounts of 2-3 cc. at a time until the pressure above normal is reduced 50 per cent, taking a pressure reading after each escape of fluid. This is repeated once or twice a day until the pressure becomes normal; if the fluid is colored it should be repeatedly drained during convalescence until clear. Bagley called attention to the excellent results from this procedure.

Temple Fay has shown that if the fluid intake is limited to 900 cc. in twenty-four hours there will be very little replacement of withdrawn cerebrospinal fluid. We follow this routine in addition to our dehydration methods. The patient's fluid intake is limited to 900 to 1000 cc. in each twenty-four hours, unless contraindicated. If the patient is in coma and cannot take fluids by mouth, we can control the fluid intake by infusion. It is our rule to saturate these patients with large quantities of fluid by mouth, infusion or clysis.

Morphine or other strong sedatives should only rarely be given in the early stages. It was definitely proven on the Neurologic Service at Bellevue Hospital, by clinical experimentation at the same time the study on caffeine, referred to above, was made, that narcotics and sedatives increased intracranial pressure in almost direct proportion to their sedative effect. This work was reported by Stevenson, Christensen and Wortis in 1927. Jacksonian convulsions, if due to localized compression of hemorrhage, edema, or neoplasm, are aggravated and often precipitated by morphine. The pupils are unreliable after administration of these drugs. Stupor or coma may be misinterpreted as being due to drug narcosis when really they may be of extreme importance in the diagnosis. This is a very prevalent and dangerous first aid method which should be avoided when possible. The delirium, convulsions and the restlessness can nearly always be controlled by reducing the pressure, which is probably more nearly the normal physiologic method of relief. Later, a prescription of two grains each of caffeine citrate, aspirin, and phenacetin will usually control pain and headache.

Coma may be of short duration only or prolonged and profound. The patient may recover consciousness and have an interval of apparently complete recovery only to relapse. If this occurs, cerebral hemorrhage, as a result of rupture of the meningeal arteries, veins, or sinuses, should be

spinal fluid may not show blood. With this type of hemorrhage we usually get our typical middle meningeal syndrome. The patient regains consciousness after the primary coma; there is a lucid interval varying from one hour to one day, followed by a gradual return of coma or stupor. The



Fig. 1. Patient with bilateral facial nerve injury and bilateral facial paralysis following skull fracture. Attempting to close eyes.

suspected. The interval of consciousness may last for several hours or possibly a day, then stupor and coma gradually return and become progressively more profound until the patient dies unless surgical intervention is attempted.

Meningeal hemorrhage may occur at the site of trauma or on the opposite side of the cranium from contrecoup force. The middle meningeal artery is most commonly injured near the foramen spinosum, often resulting in epidural hemorrhage. The



Fig. 2. Same patient as Fig. 1, attempting to smile.

ipsilateral pupil is generally dilated and a contralateral hemiplegia gradually develops. These symptoms point to a gradual encroachment on the motor cortex, and if the hemorrhage is on the left side aphasia may be an earlier symptom. Patients must be carefully observed who have suffered head injury so that the earliest symptoms of this lesion may be recognized. Hemorrhage may follow a concussion so severe that the lucid interval is absent. Jacksonian convulsions sometimes accompany this lesion. Subarachnoid hemorrhage can usu-

ally be differentiated by a bloody spinal fluid and the progression of symptoms is much slower, often extending over a period of several days. Surgical intervention is imperative in the form of craniotomy with exposure of the torn vessels. Attempt must then be made to arrest the hemorrhage.

A girl, age 14, with an apparently minor injury, was recently seen by her family physician. There were no complaints. Twelve hours later in consultation we found a typical middle meningeal hemorrhage syndrome. At operation a massive middle meningeal hemorrhage was found. The patient responded, the coma and hemiplegia disappearing almost immediately. An uneventful convalescence followed.



Fig. 3. X-ray of a fractured skull and typical meningeal hemorrhage. Complete recovery followed craniotomy and repair.

Paralysis, hemiplegia, and Jacksonian convulsions, appearing immediately, are usually symptoms of depressed fractures or lacerated brain. Meningeal hemorrhage may complicate this type of injury and must be guardedly anticipated. Compound fractures and depressed fractures call for early surgical intervention. In the former, debridement should be done at once and macerated dura and brain tissue entirely removed. Depressions should be relieved as soon as practical. Later, if the bone defect from these procedures causes any complications, it can be repaired. The sliding bone graft obtained from the adjacent outer table of the skull is usually satisfactory. If cerebrospinal rhinorrhea is present, ev-

ery effort should be made to repair the damaged dura, otherwise meningitis may develop. Subtemporal decompression is urgent if other methods fail to relieve the intracranial pressure, and if the symptoms are becoming progressively worse. This same opening may also be used at times to remove blood clots or effect drainage of bloody cerebrospinal fluid. Occasionally, bilateral decompression is necessary because of bilateral hemorrhage. It is absolutely necessary in the above procedures that one accurately localize the point of injury, otherwise irreparable damage is almost inevitable. It is well to remember that lacerated cerebrum will not repair.

We have adopted the method of watchful waiting in uncomplicated depressed fractures. We do not attempt to elevate these until after the acute stage of shock has passed. We often delay interference for several days. Fay advises against hasty manipulation or interference, including early spinal puncture.

We make it a rule to always explore beneath a depressed fracture. In practically all of our depressed fractures we have found that the inner table of the skull has fractured over an area about one-third greater than the outer table. When the underlying dura is exposed one finds that splinters of bone have lacerated the dura and cortex in about 75 per cent of the cases. Therefore, we do not feel justified in simply elevating the depression without adequate exploration. It is undoubtedly preferable to leave a bone defect than to leave macerated brain tissue and a torn dura. There is only one method of determining brain damage and that is adequate exposure.

Hemorrhage or injury along the longitudinal sinus is a rare and very obscure involvement. A boxer was admitted to Bellevue Hospital with a history of loss of consciousness following a boxing match. He regained consciousness and when admitted was perfectly rational. There was a slight spastic paraplegia involving chiefly the distal parts of both lower extremities with bilateral Babinski only brought out after careful neurologic examination. After twenty-four hours these symptoms gradually became exaggerated, though they did not spread. He could not move the feet, there was ankle clonus, and the knees

were only slightly involved. A semi-stupor gradually developed. X-ray studies were negative. A craniotomy was performed exposing the longitudinal sinus, and a small, gelatinous, sero-sanguinous clot was found on either side of the longitudinal sinus at the upper edges of the motor cortex. These were removed and the patient regained consciousness and was able to move his feet before the scalp was closed. The diagnosis of a lesion in this region is not so readily made as this brief report might suggest and the operative results are not always so happy in this region.



Fig. 4. Electrical burn with destruction of soft tissues of occipital and parietal regions. The skull in this region later became detached and was removed. (Courtesy, Dr. C. N. Carraway).

Post-traumatic sequelae or complications are the rule rather than the exception after head injuries. Headache, epilepsy and post-traumatic neurosis are some of the obscure and problematic residuals, in addition to the more apparent palsies and paralyses. These are the problems which eventually lead these unfortunates into the hands of the neurologists, even though the more acute problem has been handled by the general surgeon. Early and proper treatment will reduce the number of sequelae.

Injection of air by the lumbar route has proven of some value in the treatment of these headaches and epilepsies. This is done in the same manner as when injecting air by lumbar puncture for encephalography. The blood pressure, pulse, and

spinal fluid pressure should be carefully observed throughout the procedure, otherwise there is always the threat of a sudden and unexpected exodus immediately or within 36 hours. This procedure is not without its dangers and should only be done by one who has had extensive experience with the method as well as the subsequent care of these patients. This procedure is practically always accompanied by severe and often alarming headaches for a variable period of time. It has been found that it either gives spectacular results or else is without beneficial results.

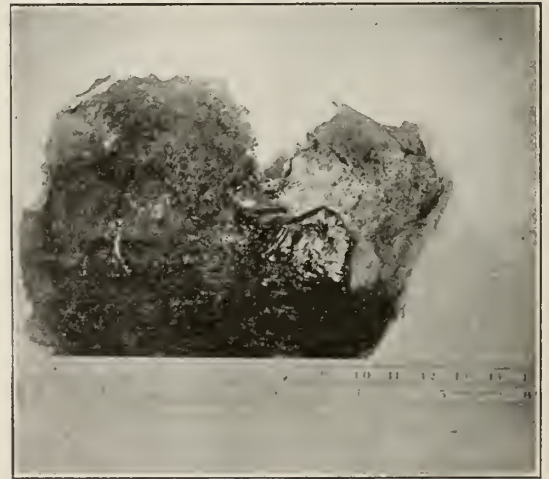


Fig. 5. Part of skull which was later removed. (Courtesy, Dr. C. N. Carraway).

Post-traumatic epilepsy must always be anticipated. The epilepsies following head injuries may be treated by the accepted routine treatment for the so-called essential epilepsies. Bagley claims to find xanthochromic cerebrospinal fluid in these patients and believes that the patients are less liable to epilepsy with the clearing of the fluid from repeated spinal drainage, if there is no focal injury. If the convulsions are Jacksonian or if they persist, often a careful observation will give a clue as to the focal point of irritation. Then arises the debatable question of surgical intervention with attempted eradication of the insulting cortical area. This will often be found to be a smoky, circumscribed area of "wet brain." One must not be misled by the immediate cessation of the attacks after operation; often the anaesthetic and manipulation seem to have a beneficial result which is not permanent.

Neuroses following head injury are probably due to minute changes in the brain substance. One must diagnose carefully and treat strenuously to obtain satisfactory results with them, diagnosis and treatment consuming unlimited time and requiring infinite patience. Best results are obtained



Fig. 6. Same patient as Fig. 4 with skin grafts beginning to cover exposed dura. (Courtesy, Dr. C. N. Carraway).

with psychotherapy and physiotherapy wisely used. The paralyses and deformities which are due to organic injury often require the assistance of the orthopedist with re-education and physiotherapy.

An interesting patient was seen with Dr. C. N. Carraway in Norwood Hospital in 1932. A boy came in contact with an electric wire and received deep burns over the occipital and parietal regions. See Fig. 4. The skull in the burned area was completely denuded of soft tissue. Later the devitalized skull became detached including both inner and outer tables. This was easily removed over an area corresponding to the loss of soft tissue. One piece of the bone removed is shown in Fig. 5. The pa-

tient was in coma and all four extremities were paralyzed at first. The coma and paralysis gradually cleared up after a period of about three weeks. Granulations developed over the exposed dura and later skin grafts were used. See Fig. 6. Six months later the patient was completely recovered and well. He later fell from a mule and was killed.

To recapitulate: Cranial trauma is rapidly on the increase. Probably 15 per cent of the admissions to city hospitals have head injuries. Most of these have involvement of the nervous system. Loss of consciousness, for a few minutes or longer, occurs in probably 95 per cent of the cases of fractured skull. Treatment should be directed primarily toward relief of increased intracranial pressure. These patients should be put to bed immediately, and, if there is coma for any appreciable length of time, they should remain in bed for six weeks or longer. Conservative treatment of simple, uncomplicated skull fractures is indicated. Examination should be made for hemorrhage or leakage of cerebrospinal fluid from any of the cranial orifices. Careful neurologic examination for cranial nerve paralysis or paralysis of the extremities is essential. Unless there is a compound fracture, diagnostic spinal puncture should be done. Hypertonic solution of glucose, given intravenously, is most valuable in reducing the intracranial pressure. Morphine is liable to obscure important diagnostic signs and in addition raises the intracranial pressure. Intracranial hemorrhage must be guardedly anticipated and cannot always be shown by spinal puncture. Immediate debridement is imperative in compound fractures. Hemorrhage may complicate severe concussion, obscuring the diagnosis. Post-traumatic epilepsy must always be anticipated. Post-traumatic sequelae are the rule rather than the exception following head injuries. Sequelae persisting over eighteen months are probably permanent. Many of the sequelae we now have can be forestalled.

The conclusions and suggestions set forth in this study have resulted from the observations of the writer in one thousand patients seen with major cranio-cerebral injuries over a period of seven years' work in neurology and neuro-surgery.

SURGICAL TREATMENT OF DISEASES OF THE BILIARY TRACT

By

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If we omit tumors of the gallbladder wall, the main diseases of that viscus are caused by infection. Whether the germs are carried to the gallbladder by the blood stream, by lymphatic channels, or by an ascending route by way of the common and cystic ducts from the duodenum, will not be further discussed in this paper. We immediately divide infections of the gallbladder into acute and chronic, while, as a matter of fact, cholecystitis may be encountered in many stages. We may see cases with fulminating empyema of the gallbladder, with gangrene of the gallbladder wall and perforation; on the other hand there may be only a mild, recurring, chronic cholecystitis. When stones are present, either in the acute or chronic cases, many other mechanical problems are at once encountered, and a new train of symptoms produced as soon as the stones endeavor to pass through the cystic duct, or after they lodge in the common duct.

In considering surgical treatment for chronic disease of the gallbladder, one must study the patient from many angles. Of prime importance, of course, is to determine the extent and intensity of the symptoms presented. The diagnostician must ascertain, at the outset, how much trouble the patient is having. Are the digestive symptoms so vague and indefinite that they are capable of being controlled by a careful adherence to a proper dietary regime and adequate eliminative measures, which experience has taught are most likely to give relief? Or is the patient reduced to chronic invalidism, by the constantly recurring flatulence, gaseous dyspepsia and attacks of pain in the right upper abdomen? Even after stones have formed, it is possible for the symptoms to be so vague as to justify the physician in advising conservative medical treatment, but when the stones lead to repeated attacks of colic, one is faced with the possibility of having one or more of these stones pass down into the common bile duct, and then the last state of the patient is worse than the first. Even when the stones are lying quietly and sub-symptomatically in the gallbladder, they

are certainly a source of chronic irritation, which conceivably may later on lead to malignant changes in the gallbladder wall.

In arriving at a correct diagnosis of chronic disease of the gallbladder, with or without stones, after a careful evaluation of the physical signs and symptoms, which includes an accurate history of the progress of the disease, there is a test which has proven of great diagnostic value, namely, the tetraiodophenolphthalein test. The following oral method of administration of this test has proven satisfactory:

1. At 6 P. M. have supper without eggs, cream, butter or other fats.
2. Immediately after supper empty 4 gms. of the dye, dissolved in 30 cc. of distilled water, into a glassful of grape juice, stir well and drink. (Solutions more than 24 hours old are likely to produce nausea. Smaller doses make the gallbladder shadow less distinct. Larger doses are likely to produce nausea, or produce shadows of excess dye in the bowels).
3. No laxative or any other medicines.
4. At 7 the next morning take a warm saline enema.
5. No breakfast. May drink water, black coffee or tea.
6. Cholecystograms are made at the 14th and 16th hours after the dye is taken, and again at the 25th hour, after lunch, in which the patient drinks a glassful of milk and cream. Have the patient hold his breath at the end of expiration for the exposure. A failure to secure the gallbladder shadow is positive evidence of disease.

In acute inflammatory conditions of the gallbladder one is faced with an honest difference of opinion among surgeons as to the best time for operative interference. Some men feel that an operation during an acute attack of cholecystitis carries with it a high mortality rate, most cases subsiding under expectant medical treatment. When the septic symptoms do not promptly subside, however, even these conservative surgeons are advising operation, rather than waiting for the inflammation to spread to the neighboring bile ducts, or delaying until the gallbladder wall has become gangrenous, leading to perforation and spreading of the infection. Judd recently has given an analysis of results in a series of 508 consecutive cases of operation for acute cholecystitis. Cholecystectomy was performed in 419, with 19 deaths, a mortality of 4.5%. Cholecystostomy was done in 89, with 5 deaths, a mortality of 5.6%. Seventy-two common ducts were opened and drained. (In 68 cases the gallbladder wall

was gangrenous, having perforated in 61 cases, with 38 abscesses about the viscus, and three cases of generalized peritonitis). Early operation is advised by him in most cases of acute cholecystic disease. Cholecystectomy, even in the acutely inflamed gallbladders, should be carried out whenever possible. When these acutely inflamed gallbladders are left in place, there may be prolonged drainage, pancreatic fistulas, or even death due to continued toxic absorption. The thick-walled gallbladder, even in the acute stage, can usually be removed as easily as the chronic one, but no one would want to take out the deeply situated, inaccessible, acutely inflamed gallbladder in a desperately ill person. A simple drainage would be indicated in order to save life, with a removal of the viscus later, if symptoms persisted. Ordinarily, the common duct should not be opened in an operation for acute cholecystitis, but if a stone is felt in the duct, even if it is lying deeply, it should be removed if possible, and the common duct drained.

M. M. Zininger, of Cincinnati, summarizes the question of immediate operation in acute cholecystitis: Fifty-four patients were observed to see if they would clear up. Thirty-seven per cent improved (they were the milder acute ones). Thirty-five per cent failed to change, and 28% became rapidly worse. In other words, 63% failed to improve. "If the attack is fulminant from the start, if it fails to subside promptly, or if it increases in intensity while under observation, early operation is indicated, and offers definite advantages."

Dr. Harvey B. Stone summarizes the subject excellently as follows: "We are convinced that prompt surgical attack is the method of choice in all types of gallbladder disease. This opinion is supported by the facts of pathology, by analogy with other acute abdominal conditions, and by actual experience as demonstrated in personal cases and by selected statistics. We further believe that, in acute cases, cholecystectomy is the operation of choice, and that only very special conditions should lead to its rejection."

Having considered acute and chronic infections in the gallbladder itself, our next question is, when should the surgeon open the common duct? Chronic jaundice in a young person is usually diagnosed as ca-

tarrhal jaundice. When found in an older patient, carcinoma of the head of the pancreas must be considered. Patients with inflammatory changes in the lower portions of the common duct, with more or less complete closure of the outlet of the bile into the duodenum, present many symptoms of biliary stasis. Some have colicky attacks without jaundice, some have mild jaundice without colic, and some have deep, silent jaundice. As a rule, all patients with chronic jaundice, which does not clear up in a reasonable time, should have the benefit of an exploratory operation. The surgeon should not wait until the destruction of liver cells has gone too far. Obstruction of the common duct is usually caused by stones, inflammation in the gallbladder, which has spread to the common duct, tumors in the head of the pancreas, either malignant or inflammatory, tumors of the ampulla of vater, carcinomas, papillomas, or adenomas. Rarely is a stone impacted so tightly in the common duct as to completely obstruct the bile. The obstruction, with the associated jaundice, is most commonly caused by the inflammatory swelling and edema at the lower end of the common duct.

Strauss et al, in Chicago, have found that an anastomosis of the common duct to the duodenum provides adequate relief of the biliary obstruction. He also employs gastroenterostomy in order to prevent regurgitation of the duodenal contents up through the anastomosis into the common and intra-hepatic bile ducts. Many other surgeons, on the other hand, not wishing to subject the patient to such a major procedure in order to secure adequate internal biliary drainage, are still content to open the common duct, remove all stones, if possible, and then drain the common duct bile to the outside through a rubber tube. Sometimes it is necessary to drain these cases many weeks before the damaged liver cells completely recover.

Before operating upon a patient that is jaundiced, it is urgently necessary to rehabilitate his blood by preoperative administration of intravenous calcium (10 cc. of 5% calcium chloride every day for three days). Sometimes it is necessary to give blood transfusions and intravenous glucose before surgery is safe.

CONGENITAL POLYCYSTIC KIDNEYS

By
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It is not my purpose or privilege to present a report on congenital polycystic kidneys based on scientific investigations, but merely to present five cases coming under my observation, all of whom were of the same parentage and died between the ages of thirty and fifty.

The father, of average build, strength and health, was an itinerant preacher, a man of laborious activities and strong emotions. He died suddenly of cerebral hemorrhage, age 58. The mother, physically strong and robust, experienced no unusual curtailments of duties because of ill health. She was the mother of ten children, but I am without knowledge of any premature deliveries. She died within a few hours of cerebral hemorrhage, age 48. None of the children had developed symptoms of congenital polycystic kidneys, else an autopsy would have been urged in each case inasmuch as findings would have been of great interest, whether positive or negative.

A disease, carrying the mortality of congenital polycystic kidneys, should receive of the profession a diligent search for its etiology and for any information leading to its background since, according to many authorities, the disease may have its birth in the flesh. Moreover, wouldn't it have its death in the discovery of its real causation, thereby placing it in the list with other preventable diseases? Literature reveals that polycystic kidneys is not a rare disease—occurring about once in 3,500 cases, but found at autopsy about once in 1,000 persons. (J. A. M. A. May 19, 1934). We must admit, however, that the disease is most baffling, inasmuch as we do not know why it should occur in successive generations, or why only a single member of some families has the disease, while in other families several may have it. It would be interesting to know if the disease is induced by any members of the flora, or fauna, or if it is merely a spurious conception of nature causing the cysts of tubular origin to crowd out or absorb the parenchyma of the kidneys, as well as that of some of the other organs. The most generally accepted theory is that the secretory

and collecting portions of the kidneys develop from two different layers of the wolffian system and subsequently unite to form a channel, but a failure to join is responsible for the cysts. This, in a measure, may account for the origin of the pathology in the kidneys, but does it account for the fact that cysts are metastasized to other organs, such as the liver, spleen and thyroid? A further discussion of the causation of polycystic kidneys would lend more to the length than to the breadth of this report, so with apologies for such a desultory preface, I shall only add that a sustained study of the cases was impossible because of transitory residence of all cases, with the exception of two.

REPORT OF CASES

Case 1. W. P. C., white, male, married, one son serving in the U. S. N. This patient was stocky built, reasonably active. Skin somewhat pallid, but as a rule his complexion was faintly yellowish. There were hypertension, and bilirubinemia, on occasions, and albumin in the urine. The heart was enlarged, but without valvular involvement. Other organs appeared to be normal, except the kidneys which were enormously enlarged, extending on both sides almost to the crests of the ilia. An x-ray picture was made by Dr. F. P. Boswell, who reported findings as follows: "There is evidence of rarefaction of the entire spine, due to absorption of lime salts. No distinct evidence of malignant metastasis, but there is evidence of considerable density over kidney region." Patient died March 24, 1922, age 39.

Case 2. Mrs. W. M. C., (A). Two children; both healthy. It was about two years before her death that I was consulted. Blood pressure was over 200; heart enlarged and bounding. She complained of intense headaches, dull pains in the back and nervousness. Both kidneys were enlarged, and urine contained albumin. Uremia caused her death on October 14, 1923, at age 42.

Case 3. J. I. C., male, married, two children. This patient was attended by Dr. W. W. McGehee, who diagnosed the disease as polycystic kidneys. I saw him on two occasions only. Death occurred February 28, 1928, age 43.

Case 4. C. L. C., male, married, two children. To age thirty, there was nothing of note in deviations from health standards to differentiate him from the ordinarily healthy man. The nature of his trouble was led to by finding of albumin in his urine and a rather high blood pressure, while standing a life insurance medical examination. Further examinations revealed that he had polycystic kidneys, but this did not discourage him from accepting a responsible position in New York City; which position he held with distinction until beginning toxemia began to exact its toll and finally collected in full, though reluctantly, February 15, 1929, age 50. Attending physicians con-

firmed the diagnosis of congenital polycystic kidneys.

Case 5. A. B. C., married, four sons, all apparently healthy, except one who, according to Dr. J. H. Watkins, has diabetes mellitus. Patient was accepted for overseas service during the World War, which likely hastened his death by reason of hardship and exposure. However, on return to his home he resumed and pursued his duties as attorney until a few days before death. During his last two years he developed secondary anemia; the hematopoietic organs could not be stimulated but stubbornly held out against any array of medication. Iron, given hypodermically, invariably produced emesis, which was not of psychologic origin as water so given did not cause nausea. The patient developed coma which lasted three days and it appeared that death would not let him through. However, the end came on April 21, 1934, age 44. A partial postmortem was consented to and was done by Dr. T. Brannon Hubbard.

Postmortem: Body well nourished, skin generally icteroid, heart considerably enlarged, but no involvement of valves; lungs negative, except for adhesions at bases posteriorly. Liver somewhat enlarged, containing a few cysts, but total involvement was not determined. Spleen not examined. Both kidneys were enormously enlarged; the left kidney, in its bed, measured bipolarly 23 cm.; across its widest diameter, 13 cm. Ocular appearance of kidneys was that of a mass of cysts varying in size from a small lemon to that of a grape. Some of the cysts contained amber colored fluid, some dark brown fluid; others contained a gelatinous substance, while a few contained clotted blood. The ureters and hila were normal in appearance, as were the blood vessels. The kidney was not weighed, but it more than half filled a gallon glass container.

Before bringing this report to a close I cannot refrain from emphasizing how interesting it would be to ascertain if the greatly enlarged polycystic kidney of the unborn offspring is the same in its micro-pathology as the congenital polycystic kidneys of the adult. If they are the same, why should one be of such rapid growth, while in the other so slow in its complete destruction of the kidney's parenchyma? It would also be interesting to know why the disease is not found in children. Is it because the children of parents having the disease are not systematically examined for the trouble? Is it not our duty to such children to keep them under observation? To have x-ray pictures taken at intervals for comparison? to frequently test kidneys for their functional capacity, checked by blood chemistry? By discharging this duty we may be able to anticipate invalidism and forestall premature death by proper regi-

men as well as proscription of all excessive strain, eating and exercise. This is the profession's duty, whenever the cooperation of the patients can be obtained.

Surgical Management of Obstructive Jaundice.—

In no field of surgery is exposure of such importance. For this reason alone, and without taking into consideration the dangers of anesthetic agents to jaundiced patients, is spinal anesthesia perhaps the most suitable of those available today. In secondary operations the field is always more or less deranged by adhesions, the separation of which is tedious and invites hemorrhage. The approach to the biliary tract is extremely important for upon it depends the accomplishment of necessary exposure and the identification and removal of the obstruction.

Stones in the common and hepatic ducts account for 20 per cent of all jaundice and about one-third of the obstructions of the extrahepatic passages. The current consensus of opinion is that these stones practically always originate in the gallbladder. Their presence in the common duct is a constant menace since they may produce progressive and recurrent infections of the ducts and liver, and jaundice. One is impressed with the finding by Judd and Marshall that in 1,768 patients with common duct stones, 22.6 per cent had had previous gallbladder operations. This finding, when considered with the Lahey's report of finding common duct stones in 19 per cent of all biliary tract operations, and that of Judd and Marshall, that in a series of 1,663 gallbladder patients stones were found in the common duct in 13.2 per cent (7.6 per cent in both the gal'bladder and ducts), indicates rather conclusively that gallbladder surgery is not as simple as it is sometimes regarded. The removal of a ductal stone found by routine examination during a gallbladder operation can be accomplished without perceptible additional risk. Rarely is it impossible to remove the stone through the incision in the common duct; however, an impacted stone in the intramural portion of the duct or in the ampulla may necessitate unusual approaches, as through the wall of the duodenum. Overlooking such a stone results in failure to relieve the patient of the symptoms for which he probably sought treatment and may necessitate a high-risk secondary operation when obstruction and its consequences have developed. The high incidence of overlooked stones has developed the criteria for exploring the common duct to the point that it should be opened not only when there is jaundice but when there is a history of jaundice.—Burns, *Texas State J. Med.* November '34.

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DR. GREENOUGH'S PRESIDENTIAL MESSAGE TO THE AMERICAN COLLEGE OF SURGEONS

In the presidential address of Dr. Robert B. Greenough, delivered before the American College of Surgeons at its recent annual meeting, held in Boston during October, we again have presented to a specialized group embracing more than 11,000 surgeons the burning problems of medical economics especially as they pertain to the surgeon and his workshop, the hospital. It will be recalled that in June of this year and just prior to the meeting of the American Medical Association in Cleveland, the Board of Regents of the College gave endorsement to a prepayment plan for medical care restricted to the hospitals approved by the American College of Surgeons, to the members of the staffs of such hospitals and physicians acceptable to such staffs. Because of this action on the part of the Board of Regents and more particularly because of the timing of its public announcement, some rather severe strictures have been hurled at the College, not the mildest of which was a resolution emanating from the House of Delegates of the American Medical Association. It is a fact that those within the medical profession whose labours are more closely identified with hospitals, such as surgeons, appreciate

the necessity for a solution of our economic problems more keenly than do those of the profession whose activities are largely conducted outside of hospitals. The surgeons, and more especially the junior surgeon not located in the larger clinical centres where hospital facilities for the indigent and semi-indigent are usually adequately provided, suffer a serious handicap because of a woeful lack of moderate-cost hospital service, as well as because of a total financial inability on the part of many of that large group which Dr. Greenough felicitously terms "the lower-level of the moderate-means group" to meet a surgical emergency, such as an acute appendix or a Caesarean section. This particular group, as every struggling young physician knows—be he surgeon or general practitioner—constitutes the backbone and the bread-and-meat factors of his livelihood. This class—the large "middle-man" of our social structure—stands between the two extremes of the well-to-do at one end of the economic scale and the absolutely indigent or necessitous at the other. The medical, surgical and hospital needs at either extreme do not now constitute the acute problem; the one—the well-to-do group—can solve the problem for itself; and for the other the community must find a satisfactory solution. But, what of the middle-man? The various experiments now going on throughout this country amongst lay groups and hospitals with voluntary prepayment insurance plans, which seek to distribute the financial load and to forearm the individual for a medical emergency, clearly point the need for a sound approach to this phase of the economic vicissitudes confronting this large and important segment of our social fabric. These vicissitudes should likewise be the serious concern of the entire medical profession whose future weal is inextricably tied in with these problems. It is for this group—the great moderate means class of our population—that Dr. Greenough envisages hopeful possibilities by the application of the principles of prepayment insurance. Quite true it is that this group constitutes a large and important segment of the entire population, whose yearnings to procure for themselves and at their own expense the best and most modern type of medical service is not only commendable, but should

receive the sympathetic consideration of the entire profession. This attitude is obligatory on the part of the profession if the commercial aspects necessarily involved in the setting up of suitable machinery are not to overshadow the far more important and salient factors of an efficient medical service, of which the profession alone should be the final arbiter. While the suggestions embodied in Dr. Greenough's message to the American College of Surgeons do not offer a panacea for all of the economic woes confronting the profession—for it does not embrace the swelling group of completely necessitous—it does drop a hint as to where certain experiments might be advantageously conducted.

J. N. B.

ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF LOBAR PNEUMONIA

Though artificial pneumothorax was employed in Germany so long ago as 1921, it is only within the last few years that interest in this method of treating pneumonia has become general. Recently, Behrend and Cowper¹ have reported their experiences with this method of therapy at the Philadelphia General Hospital. They treated eleven cases presenting physical signs of unilateral lobar pneumonia involving one or more lobes. The patients ranged from 15 to 54 years of age. "No effort was made to select patients who looked as if they might or might not get well with or without benefit of treatment. Pneumothorax was induced at various stages of the disease and the first injection of air was given as early as the second day of disease and as late as the eleventh day. Results tended to show that the time of induction is not a factor of great importance. As in the serum therapy of pneumonia, treatment should be instituted as soon as a diagnosis is definitely established."

The mortality among the eleven patients was 18.1 per cent, while the mortality rate in the same hospital during the same period among the patients with lobar pneumonia who did not receive artificial pneumothorax was 48.4 per cent. The authors then state

that "we are aware that it is impossible to draw conclusions from so small a series of cases, but we do feel that the figures here presented are interesting and highly suggestive."

Two of the eleven patients died, one of an overwhelming toxemia and septicemia and the other of pneumococcic meningitis and these deaths were "certainly not caused by the treatment given."

"Without doubt the most striking result of the treatment was the prompt relief of pain and dyspnea. To see patients looking sick as only pneumonia patients can, with anxiety expressed in every feature, with every breath seemingly a torture and every cough a knife thrust—to see these patients immediately following successfully induced pneumothorax breathing with surprised ease and lack of pain is most gratifying, and we have seen it occur repeatedly. In some cases the patient went to sleep promptly, and this was often the first protracted sleep enjoyed in from forty-eight to seventy-two hours. Of course, the patient still has lobar pneumonia and is acutely ill, but the relief of pain afforded by pneumothorax without resort to opium derivatives with their deleterious side-effects changes the psychologic outlook of the case for physician and patient alike."

The fall in temperature was described as remarkable in ten cases and in five cases the crisis was produced in twenty-four hours or less after pneumothorax. Cyanosis was relieved and cough diminished and the amount of sputum became almost negligible.

The authors used the type of apparatus employed in treating patients with pulmonary tuberculosis. "From 400 to 500 cc. usually produced the desired effect without causing a mediastinal shift. The same amount is then repeated in from eighteen to twenty-four hours. Two injections usually suffice. Injection of air by syringe and needle alone without benefit of a manometer may be likened to a blindfold intravenous puncture and is mentioned only to be heartily condemned." There were no complications directly attributable to the procedure.

It is to be hoped that further investigation will confirm the work of Behrend and Cowper and that their optimistic attitude

¹Behrend, Albert, and Cowper, Roscoe B. G.: Artificial pneumothorax in the treatment of lobar pneumonia, J. A. M. A. 102: 1907 (June 9) 1934.

will prove to be well founded. And, until more evidence is forthcoming, it is well to remember the conclusion of the Philadelphia investigators that "we believe that artificial pneumothorax is neither a 'cure-all'

nor a 'therapia magna sterilisans', but it has shown itself to be a valuable adjunct in the treatment of lobar pneumonia and even, we feel, a life saving measure in some cases."

W. W. W.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE ABORTIONIST

By

SEALE HARRIS, M. D.

Life Counsellor of The Association
Birmingham, Ala.

"Dr. Rongey,¹ former President of the American Medical Association estimates that there are more illegal abortions every year in New York and Chicago than there are children actually born in those cities. Most of these operations are performed on otherwise respectable, law-abiding, married women. Proof enough that here is another social problem that can't be eliminated by legislation. No one wants to encourage the indiscriminate use of this grim practice. However, the lash of the law, instead of correcting the evil, only whips it into dark corners, creating a vicious class of criminal practitioner—bootleg doctors and ignorant midwives who work in dark, back-room apartments. A saner, healthier attitude is that adopted by the Soviet government, which is fostering birth control education, and instituting legal abortion clinics in a spirit best expressed by the motto inscribed over the door of one such clinic: 'You are welcome this time but we hope you will never have to come again'." ("Men in White", page 108).

The most popular play, the most widely patronized movie, and the "best seller" among books, for the year 1933 was "Men in White"; a story based upon a young surgeon's escapade with a student nurse, ending in the death of the victim from infection following a criminal abortion. The author of this problem play was awarded the Pulitzer prize for the best book of the year 1933. Kingsley's statement is a challenge to the medical profession to do something about the increasing practice of fetal murder, or else we may expect the United

States to be Russianized to the extent of legalizing and encouraging abortions among women of all classes. Hundreds of thousands of laymen have read this clever appeal for legalizing fetal murder. What will organized medicine do about this growing evil that concerns the medical profession more than any other class? The Medical Association of the State of Alabama, at its recent meeting in Birmingham in April, accepted Charles Kingsley's challenge by unanimously adopting a resolution calling upon its members and the solicitors and other county officials, whose duty it is to enforce the criminal laws of the State, to join in an effort to punish criminal abortionists in Alabama.

THE CRIME OF FETAL MURDER

There seems to be no doubt that it is easy to find doctors, trained nurses, and many who have had no medical training, who sell their souls for dollars, and whose services may be readily obtained to commit fetal murder. Apparently, the tribe of murderers known as abortionists is increasing; and it is high time that they be locked up in prisons just as are other criminals, because the abortionist is a source of greater danger to the community in which he lives than the average murderer. As a rule, the man with homicidal tendencies commits not more than one murder before he is caught or has to leave the community; while the abortionist may be guilty of taking the life of an embryonic human being every day, and his criminality causes many prospective mothers to die or become invalids for life.

The crime of abortion is not confined to the unfortunate women who have sinned, but it is said to be a fact that among the wealthy classes, fetal murder is committed

1. There has never been a President of the American Medical Association by the name of Rongey. There is an obstetrician and gynecologist by the name of Abraham G. Rongey of New York, listed in the 1929 Directory of the American Medical Association.

because pregnancy and the duties of motherhood interfere with social pleasures. Indeed, it is to the wealthy class of married women, who do not look upon the interference of pregnancy as a crime, that the abortionist looks for his largest fees. The influential woman who becomes pregnant in spite of her efforts to prevent conception, appeals to her physician for help; usually on the plea that she nearly died in giving birth to her first and only child. If the physician is a man of honor, and of high ideals, he explains the nature of the crime of abortion and its dangers. He appeals to the woman's sense of honor and points out to her the joys and privileges of motherhood. In many cases he succeeds in persuading his patient to follow the course of nature; but in others the woman tries another doctor, who has the commercial instinct to such an extent that he will commit fetal murder in order to gain the practice of an influential family. It is a sad fact that in every city there are doctors whose clientele is built up by such practices, and they are the worst class of criminals in the community.

THE DUTY OF THE MEDICAL PROFESSION

It is amazing that abortionists continue their criminal practices for years without being brought to justice. It is difficult to prove the crime and it is a disagreeable duty to appear in court as a witness in such cases, so that many physicians who learn facts sufficient to convict an abortionist will not report them. Some physicians say that they are not detectives and that they are not called upon to ferret out crime, but they have the wrong conception of duty. If they knew the whereabouts of murderers of men and women they would feel it their duty to report it to the proper officer. Why not do the same with the abortionist, the worst and most dangerous criminal in any community? Of course, the entire responsibility of punishing abortionists should not rest upon the medical profession. Sheriffs, solicitors and judges should be the ones to enforce the laws, but physicians can do a great deal toward preventing this crime if they give the clues that they get to those whose duty it is to apprehend and punish criminals. They can also help by persuading judges to charge grand juries that the crime of abortion is

rampant in their communities; and that it should receive the same attention by the courts as larceny, murder, kidnapping, and other criminal practices.

It is also the duty of the medical profession to educate the public, both men and women, regarding the dangers and the crime of terminating pregnancy without sufficient cause. Just how this may be accomplished is a question. The propriety of using the newspapers for this purpose is questionable; but properly worded articles could not offend more than the reports of divorce proceedings that are published daily. Ministers may help by discussing the subject from the pulpit as they do adultery and the other sins of vice. How the public should be informed on this subject is open to question, but there is no doubt of the need for the pregnant woman to be made to realize that she is *particeps criminis* with the abortionist in committing fetal murder when she has her pregnancy terminated without sufficient cause.

LEGITIMATE INDICATIONS FOR TERMINATING PREGNANCY

Physicians should be careful in accusing a brother physician of being an abortionist. It is as much a crime to assassinate character by making insinuations without proof as it is to produce an abortion. There is also the possibility that the lives of women, who are suffering from gravid nausea, advanced tuberculosis, advanced nephritis, and from other conditions which demand the termination of pregnancy, may become endangered, because physicians are afraid of being accused of being abortionists. When the question of terminating pregnancy comes up in a physician's practice, he should demand consultation with not one, but two, or more, physicians of the highest repute, in order to protect his reputation and to give the woman and her unborn babe the best opportunity to live.

The medical profession should purge itself of the stigma that has been brought upon it by unworthy doctors. Organized medicine, largely through the local societies, should take up the question and make the effort to apprehend and punish the abortionists that thrive in every city. Women detectives have been used to advantage in apprehending such criminals. Even if abortionists cannot always be punished,

when they feel that they are being watched, it makes the nefarious business so hazardous and so unpopular that some of the worst of them have given up the practice, or have left one city to find another locality where they can ply their trade with greater security.

The French are much concerned over "race suicide"; and it is high time that the people of the United States awaken to the dangers from its decreasing birth rate. The

abortionist is partly responsible for the reduced birth rate, and he aids in keeping up the death rate, because many women who trust him die of infection at his hands, or are rendered sterile afterwards. The abortionist is one of the greatest enemies to mankind, because he strikes at the very foundation of the natural laws that perpetuate the existence of the human race. As such an enemy he should be exposed and punished.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

PELLAGRA CONTROL PROJECT

AMERICAN NATIONAL RED CROSS
IN COOPERATION WITH
THE STATE DEPARTMENT OF HEALTH

Recent Trends In Pellagra

There has been a marked decrease in the pellagra death rate in the last four or five years—this in spite of one of the worst economic depressions this country has ever known. The average rate in 1933 for the 13 states where pellagra prevails most extensively is less than one-half of what it was in 1928 and 1929, which were the peak years for most of these states. Since pellagra results from a dietary deficiency we would naturally expect an increase during an economic depression, but instead there has been a marked decrease.

Just why this reduction has occurred is a matter of some speculation, but the evidence points very strongly to two measures, namely, the promotion of gardening and the use of powdered yeast. Both projects were introduced in 1927 in the flood sections of the Mississippi Valley, and later extended over a wider area in the Southern States. By 1928 and 1929 practically every health department in these states was distributing powdered yeast to pellagra families. During the period from 1927 to 1932 the Red Cross distributed more than 200,000 pounds through chapters, health departments and physicians and well over three-quarters of a million packages of garden seeds. The downward trend of pellagra began shortly after these projects were introduced. This fact, together with the

absence of other more definite evidence, strengthens the belief that these measures were largely responsible for this reduction.

Both projects were discontinued by the Red Cross in 1932 when it was believed they were sufficiently well demonstrated and established to be continued, through local initiative. We do not know how extensively gardening was continued, but we do know that the amount of yeast distributed was materially reduced. It may be significant that in four states the 1933 death rate from pellagra has slightly increased over the 1932 rates.

A Chapter Project

The Red Cross has decided to again make yeast available to chapters in communities which have a pellagra problem, provided a satisfactory plan of distribution can be worked out with local physicians and health officials. Special emphasis is placed on methods of distribution because this is so vital for the success of the project. Where yeast is offered free to any one who may ask for it, without first ascertaining whether a diagnosis has been made by a physician or without careful instructions being given as to its use, much will be wasted. If, on the other hand, the distribution is limited to families in which pellagra exists and these are fully instructed and followed up, the beneficial effects will be far-reaching.

Chapters should ascertain whether a pellagra problem exists within their jurisdiction and how extensive it is. This can be accomplished by conferring with local physicians and health authorities. If it is found that this problem exists, and it is possible to work out a joint control program

with physicians and health officials, chapters should then communicate with the manager of the area concerned, giving an estimate of the number of families and make a request for a quantity of yeast sufficient to meet the first distribution. The supply can be replenished when exhausted.

The Project Plan

Distribution should be based on a plan agreed to by the chapter and the local health department where such an organization exists. In counties that do not have an organized health department the plan should be worked out with the local medical profession. The establishment of local supply depots at the chapter or health department headquarters is suggested. Yeast should be distributed in so far as practicable only on written orders of a physician or health officer.

Chapters should take an active part in this project. They can do so by organizing a group of volunteer workers whose primary duty will be to assist the physicians and health officers. They can help locate the untreated cases, have them consult their doctor or health officer, provide them with yeast, give instructions as to its use, and do such follow-up work as it is necessary. Volunteers should not attempt to make diagnosis, but they should make every effort to locate all pellagra families and see that they are adequately cared for after the diagnosis has been confirmed. They should also follow up all cases referred to them by physicians and the health department. Physicians should understand that chapters are not in a position to pay them for their services in connection with this project.

Plan Of Procedure

Chapters should appoint a committee of three or four individuals who are genuinely interested in the problem or use an existing committee such as a public health nursing or nutrition committee. The committee should include one or more of the chapter executives.

Duties of the Committee:

- (1) Work out a plan of distribution with the physicians and the health department and direct the chapter program.

- (2) Select a group of volunteer workers who are sufficiently interested to be willing to devote some time to this project.
- (3) Divide the county into small districts and assign one or more volunteers to each district.
- (4) Instruct volunteer workers as to their duties and keep in close contact with them.
- (5) Make concurrent reports to the area manager as to the amount of yeast distributed, the number of families and individuals served, and results obtained.

Duties of The Volunteer Workers:

- (1) Locate the pellagra families by contacting the county health officer, all physicians, school teachers, ministers, and others who may know of cases.
- (2) Visit the homes of these families, determine if possible how many have pellagra, and have them see a doctor. When a diagnosis has been established, yeast should be provided, instructions given as to its use, and a case record card filled out.
- (3) Make follow-up visits for the purpose of keeping cases supplied with yeast and of determining the progress made.

A careful record should be kept of every package of yeast distributed and every family served so the committee can make an accurate report of what has been accomplished. It would also be interesting to have a statement from the physicians and health officer as to their experience with yeast in treating and preventing pellagra. A supply of "case record" cards will be sent with each shipment of yeast.

It must be remembered that powdered yeast is used primarily as an emergency measure. The permanent solution of the problem can be solved only through the use of proper foods among which vegetables are all important. Families should be encouraged to grow gardens therefore as part of the follow-up program.—*A. R. C. Bulletin* 731.

NEXT ANNUAL MEETING

MOBILE

APRIL 16-18, 1935

BUREAU OF PREVENTABLE
DISEASE CONTROL

D. G. Gill, M. D., Director

DIPHTHERIA IN A SCHOOL

The proper procedure to follow when there is a case of diphtheria in a school or community is frequently difficult to decide. Far too often, however, the first impulse is to give to all those exposed a prophylactic injection of antitoxin. Numerous requests have been received this past fall for sufficient packages to give 1,000 units to whole school rooms and schools. This procedure is opposed by the State Department of Health on the grounds that:

1. It is unnecessary, expensive, and the immunity given is only temporary.
2. It may sensitize the child to horse serum and cause reactions if this or similar antitoxins are needed at a later date.
3. It interferes with the administration of toxoid which will confer a permanent immunity.

Antitoxin is recommended for the young members of the family who have been in *intimate contact* with the case, unless they have previously been immunized with toxoid or have been shown to be Schick negative.

A much better procedure to follow is the prompt isolation of the case, antitoxin where needed in the household, and culturing of the contacts. Any carriers found should be isolated until shown to be non-virulent carriers or until the condition clears up. At the same time toxoid should be given to all children not previously protected, eliminating, of course, those who are given the 1,000 units of antitoxin. Recent work has shown that the immunity response to alum-precipitated toxoid is rapid and that within 3-4 weeks most children have developed sufficient antitoxin to protect themselves.

The prevention of such situations is the best means of control and the routine use of toxoid by all physicians would soon build up a population protected against diphtheria.

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

NEW REPORT FORMS FOR THE
AGGLUTINATION TESTS

During the past decade the importance of the agglutination test has increased. New clinical entities, such as tularemia and brucellosis, which were formerly classified in the group of "undiagnosed fevers," have been recognized and often the agglutination reaction performed with the patient's blood serum serves to confirm the diagnosis. Endemic typhus, which has rapidly increased in the Southern States, is another disease in which this serologic test has proven of inestimable value. Nevertheless, with the increase in variety and number of specimens received by the Bureau of Laboratories, a certain amount of confusion has arisen in the interpretation of the reports.

The results of the agglutination test are always reported in terms of dilution. Under the old system the highest dilution which gave any agglutination was reported as positive. However, since there are various degrees of clumping (agglutination) and clearing of the supernatant liquid, it has been deemed advisable to report the results on a four plus basis, much the same as is used in the Kahn test for syphilis. Furthermore, it is believed that the results which are obtained on each dilution run routinely will give the attending physician more information on which to base his diagnosis. Therefore, the new report form has a box-score arrangement.

There is also the confusing factor of cross-agglutination to be considered. Occasionally a blood will agglutinate two or more test bacteria in high enough dilutions to seem diagnostic for each. While, as a general rule, there is sufficient discrepancy between these high dilutions to clinch the diagnosis, sometimes, because the high dilutions are the last ones used routinely, the interpretation becomes difficult. In these cases, which are fortunately rare, a supplemental report will be made provided enough serum remains to run higher dilutions. From the practical standpoint, it is impossible to set up dilutions to 1:20480 routinely because of the large amount of labor and time involved.

The new forms (see copy immediately below) will be ready for distribution at an early date.

Patient's Name _____ Laboratory Number _____ Date _____
The specimen of blood received on _____ gave the following agglutination reactions:

	DILUTIONS										
	1/20	1/40	1/80	1/160	1/320	1/640	1/1280	1/2560	1/5120	1/10240	1/20480
Typhoid (Widal)											
Paratyphoid A											
Paratyphoid B											
Brill's Disease (Weil-Felix)											
Undulant Fever (Br. abortus)											
Tularemia (Bact. tularensis)											

Parallel lines indicate the highest dilutions run routinely.

FOR INTERPRETATION OF RESULTS SEE REVERSE SIDE

(Reverse Side of Form)

INTERPRETATION OF THE RESULTS OF THE AGGLUTINATION TEST

Since the agglutination test is an indirect method of laboratory diagnosis considerable care should be taken in the interpretation of its results.

All positive results are reported on a four stage (plus) basis in much the same manner as the Kahn. A 4+ agglutination reaction indicates complete flocculation of the antigen and total clearing of the supernatant fluid. A 3+ is practically complete flocculation of the antigen but without total clearing of the supernatant. Two-plus and 1+ agglutination reactions are gradations between a 3+ and a total negative.

In cases where cross-agglutinations—that is, agglutination with two or more test organisms in high dilutions—occurs, further dilutions are made. When this is done, a slip saying a supplemental report will follow is enclosed in the original report. Attention should be directed to the organism which gives a 4+ reaction in the highest dilution when cross-agglutination is reported.

In cases where cross-agglutination—that is, agglutination with two or more test organisms in high dilutions—occurs, further dilutions are made. When this is done, a slip saying a supplemental report will follow is enclosed in the original report. Attention should be directed to the organism which gives a 4+ reaction in the highest dilution when cross-agglutination is reported.

For typhoid, para A and B, a 4+ reaction in the 1/80 dilution is considered of diagnostic significance. However, care should be taken in these cases because former infection or the administration of vaccine complicates the picture.

The Weil-Felix reaction is considered positive when a 4+ is obtained in the 1/160 dilution. Positive agglutinations in lower dilutions, especially in the 1/80, are suggestive and indicate a second specimen.

A 4+ reaction in the 1/80 dilution with *Brucella abortus* is considered significant, but it must be remembered that some cases of this disease never show agglutination in titers over 1/15.

Agglutination in any dilution with *Bact. tularensis* is suspicious, but as a rule, 4+ reactions occur in high dilutions when tularemia is present. Because agglutinins for *Bact. tularensis* persist for long periods in recovered cases, former infections should always be considered.

WHENEVER THERE IS ANY DOUBT CONCERNING THE INTERPRETATION OF THE RESULTS, ADDITIONAL SPECIMENS ARE ADVISABLE.

Conclusions which were drawn in a previous article in this Journal are especially pertinent here.

"1. It takes time for the agglutinins to appear in the blood stream; a positive reaction is seldom found during the first week of the disease. Therefore, samples should not be taken before the 7th to the 10th day after the appearance of symptoms.

"2. Too much reliance should not be placed on one test. When a doubtful reaction is reported on the first sample, the

Laboratory will request a second specimen if the agglutinins are present in appreciable amounts. An increasing titer on subsequent examinations helps to clinch the diagnosis.

"3. The agglutination reaction is of little value when considered alone. Since the reacting bodies frequently persist for long periods, and cross-agglutinations are not uncommon, careful correlations between histories and symptoms, and laboratory reports, are essential."

BUREAU OF VITAL STATISTICS

Ethel H. Hawley, Acting Director

SOME COMPARATIVE STATISTICS ON
HEART DISEASE

A comparison of heart disease death rates in Alabama with the rates in the United States as a whole and with other Southern States brings out some striking facts. Heart disease is increasing in Alabama, as it is in all other sections of the country. There are undoubtedly several factors that contribute to this increase. In the first place, the composition of the population is changing. Public health activities are saving the lives of children and increasing the numbers of those in the higher age groups who are more apt to die of heart disease. Increasing urbanization is another factor that would have a good deal to do with the problem, since the strain of urban life increases the death rate from heart disease materially. A third factor that has contributed to the increase is increased accuracy of diagnosis.

TABLE I

Death Rates From Heart Disease With Per Cent Heart Disease Is Of All Causes—1920-1933. (Excluding Diseases Of Coronary Arteries.)

Number			Rate per 100,000 Alabama			Per Cent Heart Disease Is Of All Causes			Rate Per 100,000 Reg. Area
White	Colored	Total	White	Colored	Total	White	Colored	Total	
1920	959	795	1754	65.9	87.6	74.2	7.2	7.2	159.1
1921	911	800	1711	61.5	87.8	72.4	7.8	8.0	156.3
1922	1035	859	1894	68.7	93.8	78.2	7.6	7.4	164.6
1923	1063	864	1927	69.2	94.0	78.6	7.6	6.7	173.8
1924	1216	1115	2331	78.2	120.8	94.0	8.3	8.1	176.5
5 Yr. Average			68.7	96.8	79.5				165.1
1925	1292	1240	2532	81.7	133.7	100.9	8.7	8.7	185.7
1926	1456	1284	2740	90.7	137.9	108.0	9.4	9.0	199.5
1927	1444	1188	2632	88.5	127.0	102.6	10.1	9.3	196.0
1928	1855	1626	3481	112.0	173.1	134.1	11.2	10.6	208.2
1929	1860	1713	3573	110.6	181.6	136.1	10.9	11.1	210.8
5 Yr. Average			96.7	150.7	116.3				200.00
1930	1884	1601	3485	110.4	169.0	131.3	11.8	11.1	205.5
1931	1728	1343	3071	100.2	140.2	114.5	11.4	10.1	201.9
1932	1771	1271	3042	101.6	131.3	112.2	11.9	9.9	209.1
1933	1873	1354	3227	106.3	138.4	117.7	12.8	10.8	205.9

As will be seen from Table I, there has been an increase, not only in the rate per 100,000 population, but in the per cent heart disease deaths are of deaths from all causes. Also there has not been as much variation in the ratio of heart disease deaths as in the death rates.

The mortality from heart disease is particularly great among the colored popula-

tion, the greatest difference between the white and colored rate occurring between the ages of 25 and 64. Part of this difference is no doubt due to better diagnosis among the white population, many colored deaths being attributed to "heart disease," when a more accurate diagnosis would have classified the death in another category. An accurate picture of the situation could not be arrived at without taking the contributory causes into consideration. The fact that in these age groups the colored rate is higher for valvular heart disease than for any other type would indicate that syphilis has a great deal to do with heart disease among the negroes. Negroes are also particularly susceptible to respiratory diseases and have a high morbidity rate from typhoid fever and malaria. The medical attention and care they receive when suffering from these diseases is probably a contributing factor in their high heart disease rate.

When you study the figures in detail some striking facts are brought out. In the first place, while the country as a whole has shown an increase, the increase has all been in ages over thirty and the younger groups have shown a decrease. In Alabama, the death rate for white persons between the ages of five and twenty has increased both when the rates for 1925 are compared with 1932 and when the average for 1924-1926 is compared with the average for 1930-1932. It should be borne in mind that even with this increase the death rate at these age groups is not as high in Alabama as in the country as a whole. However, this is an angle of the heart disease problem that will bear further study by the physicians of Alabama.

Alabama not only has a very favorable death rate from heart disease when compared with the country as a whole, the rate in the Registration Area in 1933 being 73 per cent more than in Alabama, but when compared with other Southern states, Alabama stands tenth, only Mississippi, Oklahoma and Arkansas showing a lower rate for 1933.

Part of the difference in the rate between Alabama and the United States as a whole may be explained by the difference in the sex, color and age composition of the population. A standardized rate for Alabama, based on the composition of the population

of the United States, is considerably higher than the actual rate, but not as high as the rate for the country as a whole.

Death Rates Per 100,000 From Heart Disease (Including Diseases Of Coronary Arteries.)
Urban And Rural—1932

	Alabama	Reg. States
Cities of 10,000 or more.....	184.9	255.6
White	167.1	254.4
Colored	213.4	268.8
Smaller Cities and Rural Districts	106.2	194.5
White	99.6	202.5
Colored	118.7	148.4
Cities of 2,500-10,000.....	161.5	
White	142.6	
Colored	209.9	
Rural	101.2	
White	95.2	
Colored	112.1	

When the rates for urban and rural areas are compared, some marked differences occur. In the Registration Area there is only a slight difference in the rates for white and colored, both in cities of over 10,000 population and in small cities and rural areas, with the white rate higher than the colored in the latter. In Alabama there is a considerable difference between urban and rural rates for both white and colored, but in all groups the colored rate is much higher than the white.

In common with the experience of the United States as a whole, the rate from valvular diseases of the heart shows a downward trend, while that from myocarditis is increasing. This is to be expected with the change in the age grouping of the population.

In a brief article of this sort, it is impossible to do more than point the way for further study. Since these preliminary figures for Alabama show such wide differences in some particulars when compared with other sections of the country, it would seem that a more detailed study would be worth while, particularly in an effort to explain the increase at the younger ages.

"All the world is, theoretically at least, concerned with the practice of health, since it has been shown that the wealth represented in the living human beings of any nation is at least five times that of all material possessions of its people."

BUREAU OF SANITATION

G. H. Hazlehurst, Director

RESUME' OF STATE-WIDE PROGRAM AGAINST DENGUE FEVER

On the night of July 27, 1934, a telegram was received by the State Health Officer from the Surgeon General of the United States Public Health Service, stating, in effect, that eighty cases of dengue fever had appeared in a neighboring state where the disease had been prevalent for a month, and advising that cities be instructed to inaugurate an immediate clean up on *Aedes* mosquito breeding.

Considering the many characteristics of this disease, it was decided to take action on the telegram. In view of the fact that three weeks would necessarily elapse after starting work, looking to the control of the vector, *Aedes aegypti*, before control would result, it was decided to start at once.

There appeared two possibilities or ways of approaching the problem: (1) to bring the situation to the attention of the Alabama Relief Administration and determine what aid might be given; or (2) to contact each municipality and determine what steps each could take.

On the morning of the 28th, the Alabama Relief Administration was contacted, through its State Director. The campaign was approved. It was arranged that the State Health Department would lay the basis through proper newspaper publicity. Articles were published, explaining to the public the planned mobilization of a state-wide campaign and how each citizen could cooperate by preventing mosquito production around the home.

A basis of operation had to be established. Some of the experience gained in the epidemic of 1922 was used. This indicated that 48 counties in the central and southern part of the State would bear the brunt, should the disease gain a foothold. These counties, due to their location, were more subject to the entrance of human carriers of dengue fever and the subsequent spread of the disease; hence, for the time being, and in a preventive campaign, only 48 of the 67 counties were selected for the work. Another county, making a total of 49, was added later.

As the population centers would be exposed first, a practical limit of population group selection was made. Towns above 500 were selected for work. The number of men, operators and helpers, needed was based on population. Towns from 500 to 1,000 were to have one operator. One helper was to be provided for each additional thousand or fraction thereof.

The project was set up by the Alabama Relief Administration as a State project, and was released on Monday, July 30, simultaneously with material prepared by the Engineering Division of the State Department of Public Health. This included a letter to county health officers, asking that they assume leadership; suggesting procedure for organizing; notes on the life and habits of the *Aedes aegypti* mosquito; a typical letter to the householder; a copy of the recent newspaper article; and notes on the disease as abstracted from medical literature.

Thirty-three of the forty-eight counties selected for the endeavor were provided with health units. Where no health unit existed the material was sent to the relief work directors. Two of these counties were not participating in the relief program and, therefore, had no relief labor available.

The area represented by the 48 counties was divided into five districts. Five engineers previously assigned to the State Health Department for cooperative work with the Relief Administration were given instructions and each assigned to a district. On August 1st organization began, county by county. Counties were reported to the State Health Department as they completed arrangements and started work in the various communities.

On August 6th, a suggested list of typical breeding places for the *Aedes aegypti* mosquito was sent all county headquarters to be placed in the hands of the workers.

The identification of adult mosquitoes was arranged for by the Bureau of Sanitation. Mosquitoes, with their identification, breeding habits, and normal flight range indicated, were returned to the persons who sent them in.

On August 15th, 37 counties and 116 municipalities had reported as working. Nine counties had yet to report as having actually started. These contained 35 municipi-

palities. Of the two counties without organizations, one reported its main center as under control through local full-time efforts, and the other reported inability to undertake the program except through public notice and individual effort. By August 20th, 46 counties were completely organized and work was progressing in 152 municipalities. During September three more counties were organized and work started in four more towns, making a total of 49 counties and 156 municipalities included in this control campaign.

Difficulties were naturally encountered in inaugurating a new project with some new personnel classification, and with unfamiliar objective. The project had to be "shaken down" to fit the working conditions of the relief organization in each county. In this the engineers were able to render assistance, interpret the plan for organization within the municipalities by districts, bring the county health departments in complete touch with the Alabama Relief Administration forces, or give the works' director aid where health units did not exist.

At this date, November 1st, no dengue fever outbreak of moment has occurred in the interior of the State, nor is any expected. Along the Georgia and Florida border at three points outbreaks have occurred. Emergency measures including house spraying and general intensified clean-ups in two of these with relief labor and local aid has slowed transmission to where cases are rapidly disappearing. The third situation was likewise brought under control through reduced vector breeding.

Throughout Alabama reduction of mass *Aedes aegypti* production by this program has, no doubt, prevented to a great extent the prevalence of dengue fever.

Many lessons have been learned through this campaign and its weaknesses recognized. It was demonstrated that control of *Aedes aegypti* can not be secured rapidly and uniformly under existing conditions. A major obstacle in control is the consistent breeding in junk yards, with special reference to used automobile parts and scrap iron. Such junk business should be given future attention by the municipal governments looking to the permanent abatement of mosquito production. Major weakness-

es recognized in the program were in general as follows:

(1) Lack of detailed information reaching the inexperienced workmen and inadequate supervision by experienced workmen.

(2) Lack of transportation for workmen in the larger cities.

(3) Lack of cooperation in a few instances by municipalities in providing for collection of receptacles placed on the street by workers or by individuals.

(4) In a few of the larger cities the total number of laborers requested was not made available. This was attributed to a lack of proper type of laborers required for the work and to the fact that other work projects had already absorbed the labor.

Taking everything into consideration, however, by a coordination of A.R.A. and county and State health workers the program has proven its worth, and a general infection in the State has, no doubt, been prevented.

G. H. H.

The physician who accepts a venereal case for treatment has a very peculiar and important responsibility. First of all, he should stress the seriousness of the disease to his patient and take a real interest in the case. Get the patient interested by allowing him to look through the microscope at a stained smear and explain as you go along with the case why you do this and that. This will certainly help to bring about a better co-operation from the patient. Further, the physician should not discharge the case as "cured" until he has utilized the several tests for "cure," and then should be honest and frank enough to advise against transference of the disease for some months after he thinks a "cure" has been obtained. We know that a great number of infections are transferred during the latent period of the disease, or after the patient has been told that he is "cured." Pelouze states that most males contract the disease from "cured" women.

There is no doubt that some of us release our patients entirely too soon, without using a reasonable amount of "test cures," and herein lies upon our shoulders part of the blame for the spread. A large part of the blame unquestionably rests with the patient, for it is frequently a difficult matter to secure co-operation, especially when the disease is under control. As soon as the discharge ceases and there are no apparent subjective symptoms, away they go, thinking all is well.—*Bowman, Virginia M. Monthly, Dec. '34.*

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	Sept.	Oct.	Oct. Estimated Expectancy
Typhoid	101	51	128
Typhus	36	24	9
Malaria	1367	984	615
Smallpox	0	0	6
Measles	112	84	31
Scarlet fever	106	114	192
Whooping cough	115	79	59
Diphtheria	275	291	366
Influenza	45	59	90
Mumps	12	6	20
Polioyelitis	10	5	5
Encephalitis	3	3	1
Chickenpox	7	22	14
Tetanus	6	6	7
Tuberculosis	288	204	341
Pellagra	21	11	36
Meningitis	2	1	3
Pneumonia	60	95	75
Syphilis (private cases)	348	242	191
Chancroid (private cases)	2	1	11
Gonorrhea (private cases)	200	194	178
Ophthalmia neonatorum	2	1	1
Trachoma	0	2	1
Tularemia	0	0	0
Undulant fever	8	6	2
Dengue	234	543	0
Amebic Dysentery	2	4	0
Rabies—Human cases	0	0	0
Positive animal heads	75	56	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

ALABAMA, SEPTEMBER 1934

CAUSES	Number of Deaths Registered Sept. 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	Sept. 1934	Sept. 1933	Sept. 1932
ALL CAUSES	1190	938	2138	934.7	920.2	875.1
Typhoid fever	5	13	18	7.9	5.3	8.1
Typhus fever	3		3	1.3		
Smallpox						
Measles	3	4	7	3.0		
Scarlet fever	2		2	0.9		2.7
Whooping cough	7	6	13	5.7	5.8	4.0
Diphtheria	16	9	25	11.0	9.8	13.0
Influenza	11	5	16	7.0	9.8	4.9
Pneumonia, all forms	53	42	95	41.7	32.4	22.5
Polioyelitis	2	1	3	1.3	0.9	
Tetanus	1	3	4	1.8	2.2	4.5
Tuberculosis, all forms	46	76	122	53.6	56.8	63.0
Tuberculosis, pulmonary	41	71	112	49.2	52.8	55.8
Malaria	36	24	60	26.3	24.4	13.9
Cancer, all forms	88	39	127	55.8	57.7	48.1
Diabetes mellitus	13	5	18	7.9	8.9	10.8
Pellagra	10	7	17	7.5	12.4	10.8
Cerebral hemorrhage						
apoplexy	90	31	121	53.1	56.8	56.7
Diseases of heart	195	148	343	150.7	108.7	111.6
Diarrhea and enteritis						
Under 2 years	30	10	40	17.6	20.9	16.2
2 years and over	7	6	13	5.7	8.4	7.6
Nephritis	91	55	146	64.1	72.3	79.2
Puerperal state, total	12	12	24	10.5	19.1	17.5
Puerperal septicemia	2	4	6	2.6	8.0	4.5
Congenital malformations	11	2	13	5.7	8.4	7.6
Congenital debility and other diseases of early infancy	49	40	89	39.1	44.4	58.0
Senility	6	22	28	12.3	17.8	18.4
Suicides	18	2	20	8.8	4.0	7.2
Homocides	16	50	66	29.0	26.1	16.2
Accidental burns	4	3	7	3.1	1.8	1.3
Accidental drownings		2	2	0.9	2.2	5.4
Accidental traumatism						
by firearms	7	3	10	4.4	1.3	2.2
Mine accidents	3	1	4	1.8	0.4	0.9
Railroad accidents	4	1	5	2.2	4.4	6.7
Automobile accidents	38	11	49	21.5	24.0	23.4
Other external causes	28	15	43	18.8	23.1	25.2
Other specified causes	202	146	348	152.8	146.0	126.4
Ill-defined and unknown causes	83	144	227	99.7	103.4	85.0

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

At the October meeting of the Walker County Medical Society, Jasper, Dr. R. A. Berry of Birmingham presented a paper on "The Injection Treatment of Hemorrhoids."

* * *

Dr. A. C. Jackson, of Jasper, has been made a Fellow of the American College of Surgeons.

* * *

Note is made of the death, on October 29th, of Dr. F. S. Dailey, Tunnel Springs, who was President of the Monroe County Medical Society for thirty years. At the time of his passing Dr. Dailey was President-Emeritus of the Society, which honor he had held for four years.

* * *

Dr. W. S. Littlejohn, Birmingham, addressed the Walker County Medical Society on November 9th, his subject being "Pituitary Tumors."

The fall meeting of the Southeastern Division of the Association was held in Dothan on November 9th, with Vice-President G. W. Williamson presiding. "Dengue Fever and Some of Its Findings" was discussed by Dr. T. K. McFatter of Dothan. Dr. P. P. Salter, Eufaula, presented a paper on "Appendicitis in Pregnancy." Dr. J. A. Keyton, Dothan, discussed "Coughs." Dr. John A. Martin, Chairman of the Association's Committee on Legislation and Medical Economics, discussed some of the problems presented by the State's relief program.

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Dr. E. N. Harris, Russellville, Life Counsellor of the Association since 1924, died at his home on September 26, of angina pectoris.

* * *

Record is made of the death, on November 26th, of Dr. W. L. Stubbs, Dutton, President of the Jackson County Medical Society.

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Recent accessions to the Association are Drs. Moody Walker, Huntsville; E. A. Thorne, Scottsboro; and Harold Hamnett, Magnolia Springs.

Book Abstracts and Reviews

Nature's Way: The Fertile and Sterile Periods of Marriage. By Victor C. Pedersen, A. M., M. D., F. A. C. S., Secretary-Director of the Institute of Family Relations in the City of New York, Incorporated. Cloth. Price \$1.00. Pp. 81. New York: G. P. Putnam's Sons, 1934.

Despite all the publicity that has attended the birth control movement, no method has yet been found which is, in all respects, satisfactory. A small percentage of failures still exists. Even the best methods, using mechanical devices and chemicals which are harmless, have never reached a state where they fail to offend the esthetic sense. The opposition of the Catholic Church has been one of the chief stumbling blocks in the spread of the movement. Yet the Catholic Church has approved one method of birth control, namely, the one which takes advantage of the "safe period". It is this method which Pedersen describes as "Nature's Way." The original studies were made separately by Ogino and Knaus with a fairly large series of cases and their work has been recognized by Novak. The failures run around ten per cent which the author claims to be better than with any contraceptive device or chemical but which in the reviewer's opinion is about double the percentage with combinations of diaphragm and jelly. Unfortunately, the method demands cooperation of both parties and continence over a period of time in each cycle is not easily obtained from men in the lower walks of life. Like other methods, it will work best with the more intelligent classes who need no new methods.

A powerful argument against birth control was that it might be used by the unmarried (in fact, it has been used by many of them for years). The use of the safe period may well be employed by the unmarried and married alike and with less embarrassment to the former than the mechanical and chemical devices.

The reviewer finds the terms "Nature's Way" and "The Natural Method" decidedly unscientific and objectionable. He finds many of the author's statements scientifically inaccurate. Yet on the whole the booklet describes accurately and concisely the present status of the new method of birth control in language easily understood by any layman. It would be of value to physicians to spend an hour or so reading it.

C. K. W.

Before The Dawn, By John Taine (Eric Temple Bell, Professor of Mathematics, California Institute of Technology; Member National Academy of Sciences; Past-president Mathematical Society of America). Cloth. Price \$2.00. Pp. 247. Baltimore: Williams and Wilkins Company, 1934.

Under the title of Eric Temple Bell, the author has created a name for himself as a scientist. Under his nom-de-plume, John Taine, he has several books of romance to his credit—none, however, either masterpieces or best sellers. In this volume on which appear real name and pseudonym, he has combined scientist, author and romanticist to the disadvantage of all three. By means of a television, the monsters who roamed the earth millions of years ago are reproduced in light so vivid that to the narrator they seem real. He describes, as if he were actually witnessing it, the struggles of

the great reptiles against each other and against a hostile world. The plan of the book is excellent but the author lacks the descriptive powers to make these monsters real. One can not visualize them from his descriptions. The reviewer, wrought into a state of keen anticipation by the remarkable blurbs written by the publishers' advertising man, read on and on hoping to find the descriptive gem he thought was there—then put the book down, when the last page was finished, with a shrug of the shoulder that meant, "That's that."

C. K. W.

The 1933 Year Book of General Therapeutics. Edited by Bernard Fantus, M. S., M. D., Professor of Therapeutics, University of Illinois College of Medicine; Member of Revision Committee of the United States Pharmacopoeia and the National Formulary Committee; Director of Therapeutics, Cook County Hospital. Cloth. Price \$2.25. Pp. 464. Chicago: The Year Book Publishers, Incorporated.

The year's volume on therapeutics contains more than the usual share of interesting articles and valuable material. There are articles on the use of histamine in determining the adequacy of the circulation of a part of the body, on acetarsone insufflation in the treatment of trichomonas vaginalis vaginitis, of gentian violet in the treatment of burns, of carbosone in the treatment of amebiasis, of Sauer's vaccine in the prevention of whooping cough, of sodium chloride in Addison's disease, of ephedrine and glycol in the treatment of myasthenia gravis. It is suggested that insulin not only relieves the symptoms of diabetes but may even, in adequate doses, cure it. Methylene blue is not fulfilling its promise of a perfect antidote for cyanide and carbon monoxide poisoning. Barbiturate compounds are proving most effective in the treatment of strychnine poisoning. Many other interesting items are included in this book which the editor refers to as "a feast, exceptionally replete with good things therapeutic."

C. K. W.

Practical Talks on Heart Disease. By George L. Carlisle, M. D., Associate Professor of Clinical Medicine, Baylor University, Dallas, Texas. Cloth. Price \$2.00. Pp. 153. Springfield, Illinois and Baltimore, Maryland: Charles C. Thomas, 1934.

In this little book, the author has condensed the knowledge essential to the intelligent treatment of heart disease. In the author's opinion, ninety per cent of abnormal hearts can be readily diagnosed and treated without any complicated apparatus other than a stethoscope. He has written his book for the man who treats most cases of heart disease—the general practitioner. Though one may get the impression that the book is a little too elementary, further reading will convince him that it contains a vast store of information.

The author states that the average physician expects to find some physical change upon examining a patient with angina pectoris, whereas such is not really the case. He states that much time is wasted in percussion which is, as a rule, too inaccurate to give any more information than does palpation of the apex beat which takes so little time. The chapter on cardiac neurosis is well done, lacking only reference to the close linking with "nervous indigestion" and the few drugs which may be

of help in treatment. The description of the early stages of sub-acute bacterial endocarditis is accurate but the later stages of the disease—the marked anemia, nephritis and uremia—are not mentioned. The chapters on angina pectoris and coronary thrombosis are excellent. On the whole the book is an exceptionally valuable one to anyone who treats heart disease.

C. K. W.

Woman's Auxiliary

Minerva S. Roe
(Mrs. Lee Wright Roe)
State Publicity Chairman
Mobile, Alabama

Units of the Woman's Auxiliary in the State of Alabama are indebted to Dr. Douglas L. Cannon, Managing Editor of the Journal of the Medical Association of the State of Alabama, for valuable space in which to record their activities each month.

The following counties are organized:

Baldwin: Mrs. W. C. Holmes, Foley.
Calhoun: Mrs. T. F. Huey, Anniston.
Choctaw: Mrs. H. H. Mason, Butler.
Etowah: Mrs. Alex Graves, 616 Haralson Avenue, Gadsden.
Franklin: Mrs. W. E. Wilson, Russellville.
Jefferson: Mrs. E. M. Norton, 674 Maple Street, Fairfield; Mrs. J. R. Chandler, 830 South 14th Street, Bessemer.
Madison: Mrs. M. M. Duncan, Huntsville.
Franklin: Mrs. W. E. Wilson, Russellville.
Mobile: Mrs. Robert Cochrane, Mt. Vernon.
Montgomery: Mrs. Gibson Reynolds, 622 South Perry Street, Montgomery.
Sumter: Mrs. J. P. Scales, Livingston; Mrs. R. C. Hill, York.

This is an encouraging report, and more auxiliaries are expected to be added to the list in the near future.

Mrs. W. E. Wilson, President of the Franklin County Auxiliary, sends an excellent report of this unit's fine activities. Its major project is the Lettie Daffin Perdue Scholarship Fund. This unit was favored at its September meeting with an address by Dr. Douglas L. Cannon, Assistant in Administration to the State Health Officer. His subject, "The Maintenance of Physical Health," according to the Franklin Times, "held the intense interest of the group of women for more than half an hour."

The Bessemer Auxiliary plans this year to serve milk in one of the schools. Mrs. F. C. Smith, Publicity Chairman, reports a

large and interested membership for this unit. Its officers are:

Mrs. J. R. Chandler, President
Mrs. George Waller, Vice-President
Mrs. Joe Parsons, Secretary
Mrs. M. G. Neely, Treasurer

The Etowah County Woman's Auxiliary at Gadsden has just organized, and its first meeting this fall was devoted to the adoption of a constitution and by-laws. Mrs. R. D. Clark, publicity chairman, reports that this unit will have a committee to investigate cases of needy and all defective children in the public schools, and render them as much help as possible.

The Mobile County Auxiliary looks forward to the first fall meeting, November 23. This unit is well organized and is proud of its large membership. Plans for the year's work will be discussed under the leadership of a very capable president, Mrs. Robert Cochran of Mt. Vernon.

The unit regrets the passing of a most valued member, Mrs. Charles Mohr, wife of Dr. C. A. Mohr, for so many years Mobile County's health officer.

The State Publicity Chairman will be glad to receive reports of work done by the various medical auxiliaries throughout the State. Such reports should be in the hands of the Chairman early in the month so as to reach the Journal by the fifteenth of the month.

Truth About Medicines

PROPAGANDA FOR REFORM

Iron and Copper Retention in Children.—As a result of experimental studies during the last six years, the necessity of both iron and copper in the cure of "nutritional" anemia, the condition resulting from the consumption of an exclusive milk diet, has been emphasized. However, one commentator has stated that the claims for the efficacy of copper in the treatment of clinical anemias have not thus far been convincing. Nevertheless the known indispensability of iron and the possible essential nature of copper lend interest to a recent investigation by Daniels and Wright of the requirements of these two metals in children. The conclusion was reached that 0.6 mg. of iron daily per kilogram "should

meet the needs for maintenance and growth of the average child of the age studied." It was tentatively suggested on the basis of the observations that at least 0.1 mg. of copper per kilogram of body weight should be contained in the daily food of children of pre-school age. It is of interest that in this investigation almost all (from 93 to 98 per cent) of the excreted copper and iron appeared in the feces. The fact that on the higher levels of retention of copper there was a fairly close proportion between iron and copper retention (5:1) may indicate that there is in man also an interrelationship between the metabolism of iron and of copper. (Jour. A. M. A., Oct. 13, 1934, p. 1154)

"Throw-Away" Medical Periodicals.—The little magazines sent without subscription charge to various classes of readers are an interesting phenomenon. The complete costs of publication are of course borne by the advertiser. Most of the advertising in such publications consists of the promotion of materials that could not possibly be accepted by the various councils and committees of the American Medical Association. The "throw-away" called "Medical Economics" has appealed to the basest motives of those whom it attempts to reach, setting cash above conscience in medical practice. It seems much more concerned with the maintenance of income than with the maintenance of satisfactory standards of treatment. A more recent comer in this field is a periodical called "Modern Medicine," emanating from Minneapolis. Its advertising is for the most part of products that simply could not be accepted yet it contains as an advisory board a list of leading names in the field of medicine, many of them officers of well established medical organizations. A third class of periodical in the "throw-away" field is the one that purports to be a digest of medical literature, including either the abstracts or the condensations of medical articles. In the lay field such publications are sold by subscription and seem to serve a useful purpose. For years manufacturers of proprietary medicines have been circulating house organs and other medical literature to physicians with the obvious intent of promoting interest in the drug field and particularly in the products which they manufac-

tured. Such material was sent to the medical profession with the clear intent of selling goods. The new type of throw-away periodical has its intent concealed. It is thus not to be compared in its ethical status even with the type of house organ freely circulated by the proprietary medical interests. (Jour. A. M. A., Oct. 20, 1934, p. 1237)

Hyperpyrexia Produced by Physical Agents.—Recently a survey of hyperpyrexia produced by physical agents has been carried out by the Council on Physical Therapy. The object of the survey was to evaluate the efficacy and to determine the dangers connected with the production of fever by physical agents. A list of questions was sent to physicians who have published articles on the subject of hyperpyrexia or have in some way been familiar with the subject. Several sources of energy were reported as having been tried; for example, diathermy, radiant energy, hot water baths, and various sources of high frequency current. Of this group questioned, more physicians made use of diathermy than any other method. Radiothermy, produced by either tubes or spark gap, came next. After a careful study of this survey the Council believes that to subject a patient to an artificial fever or from 105 to 106 F., sustained for five hours or more, is to subject him to a fairly strenuous cardiovascular functional test. Patients with myocardial degeneration or with valvular, coronary or other cardiac abnormalities, with impaired renal function from organic disease, with excessively high blood pressure or arteriosclerosis, or with tuberculosis, diabetes or far advanced syphilis of the central nervous system do not tolerate such treatment well and should not be subjected to it. The Council on Physical Therapy realizes that this preliminary survey is far from complete. However, the survey does show that the treatment of disease by means of hyperpyrexia is now established but that the best method for administering artificial fever induced by physical agents that can be employed with safety, convenience and comfort to the patient and is subject to complete control by adequately trained physicians, is not firmly established. The Council believes that this method should be used only in hospitals, surrounded with the

safeguards commonly employed in a major surgical operation and under the direction of physicians. The assisting technician should have ample training and experience and must be capable of recognizing untoward symptoms and know ways of avoiding dangers. (Jour. A. M. A., Oct. 27, 1934, p. 1308)

"Vita-Cell" Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that under the uninformative proprietary name "Vita-Cell," Godissart and Pyles, Hollywood, Calif., market a series of products: Vita-Cell—Surgical, Vita-Cell—Dental, Vita-Cell—Home Treatment, Vita-Cell—Dental Plastic, Vita-Cell—Ointment, Vita-Cell—Soap. "Vita-Cell" is claimed to be a "A Superior Antiseptic, Deodorant and Healing Agent." In submitting the product to the Council the firm stated that since "Vita-Cell is a secret formula, a statement of the process of manufacture must necessarily be limited." The Council, of course, cannot consider the acceptance of a product of secret composition. Although at various places in the advertising it is stated that "Vita-Cell" is not intended as a "Cure-all," throughout the advertising the product is recommended in a host of conditions, from "Athlete's foot" to venereal infections, but the firm has submitted no evidence in support of these claims. The Council declared "Vita-Cell" and the submitted forms under which it is marketed unacceptable for New and Non-official Remedies, because the preparation is of secret composition and is marketed under an uninformative proprietary name with exaggerated and unwarranted therapeutic claims in such a way as to lead to its ill advised use by the public. When the foregoing was sent to Godissart and Pyles the firm offered to "make clinical control tests in the manner prescribed by your Council of Therapeutics if you will be kind enough to describe to us the technique you desire." The Council holds the burden of proof for such claims to lie justly on the firm which makes them. The firm has not submitted any evidence for the therapeutic value of "Vita-Cell" and "Vita-Cell" preparations. The Council, therefore, voted to confirm its rejection of "Vita-Cell" and the "Vita-Cell" preparations. (Jour. A. M. A., Oct. 27, 1934, p. 1309)

Erysipelas and Prodigiosus Toxins (Coley).—The Council on Pharmacy and Chemistry reports that in 1910 the preparation "Erysipelas and Prodigiosus Toxins-Coley" had been sufficiently investigated to warrant its inclusion in New and Nonofficial Remedies. At that time it was estimated to effect a cure in from 4 to 9 per cent of cases of inoperable sarcoma. However, in 1914 New and Nonofficial Remedies was revised to state that while this remedy is said to have benefited and produced cures in a small percentage of cases treated, there is some difference of opinion as to this. Because of this relatively indefinite status of the product, it was deemed expedient at the time of its reconsideration this year to review the situation with a view to the elaboration of a more specific and explicit estimate of the therapeutic utility of the preparation and of its limitations. It appears that (1) the combined toxins of erysipelas and prodigiosus may sometimes play a significant role in preventing or retarding malignant recurrence or metastasis; (2) occasionally they may be curative in hopelessly inoperable neoplasms; (3) probably their value is rather strictly limited to tumors of entodermal or mesodermal derivation and, more particularly, in the case of bone tumors, to those exhibiting little or no osteoplasia. The Council has for these reasons retained Erysipelas and Prodigiosus Toxins-Coley in New and Nonofficial Remedies, with a view to facilitating further studies with the product, especially in connection with its uses as a prophylactic in conjunction with conservative or radical surgery. Its use in definitely inoperable cases may be quite justified, in many instances, as a desperate attempt to combat the inevitable. (Jour. A. M. A., October 6, 1934, p. 1067)

The Clayton E. Wheeler Fraud.—The Bureau of Investigation reports that Clayton E. Wheeler, M. D., of San Francisco and Los Angeles has for some years been carrying on a piece of mail-order quackery of the "gland-rejuvenation" type. In May of this year, after an extensive hearing, the Post Office Department declared Wheeler's mail-order scheme a fraud and debarred it from the United States mails. In addition to his mail-order quackery, Wheeler apparently has conducted so-called clin-

ics. In the case of the clinics, if his advertisements are to be believed, his "treatment" consisted of the "injection in the walls of the abdomen of the gland needed." As the injection treatment was obviously unsuited to the mail-order scheme, Wheeler sent his mail-order dupes suppositories which were purported to contain certain glandular substances. The suppositories, which were to be used per rectum, according to Wheeler's own claim at the federal hearing, contained the following desiccated material: Thyroid gland tissue $\frac{1}{4}$ grain; Whole pituitary tissue $1\frac{1}{2}$ grains; Testicular substance 5 grains, Liver substance 5 grains; Prostatic substance 2 grains; Suprarenal substance 1 grain. The government analyst who testified at the hearing declared that actually there was only $1\frac{1}{2}$ grains altogether of protein matter in the suppositories that Wheeler sent out, and in at least one of the samples examined, the animal tissue was found to be largely composed of striated muscle fibers and not glandular tissue at all. In addition Wheeler also sent to his victims four tubes containing semiliquid matter, and the instructions were to use one tube a week, injecting the material into the rectum. According to the government analyst, the tubes contained some protein matter, with a small amount of phenol (carbolic acid) as a preservative. The advertising, of course, carried the usual collection of testimonials. From these the public was led to believe that Wheeler's treatment would not only restore youth, but would cure pernicious anemia, arthritis, asthma, bronchitis, rheumatism, lumbago, bronchial trouble, diabetes, paralysis agitans, sciatica, high blood pressure, heart trouble and other disorders and diseases. Following the hearing, Judge Karl A. Crowley, Solicitor for the Post Office Department, declared that Wheeler's scheme was one for "obtaining money through the mails by means of false and fraudulent pretenses, representations and promises." He recommended the issuance of a fraud order against "Clayton E. Wheeler, A. B., M. D., Dr. C. E. Wheeler, Dr. Clayton E. Wheeler, Dr. Clayton E. Wheeler, Surgeon, Clayton E. Wheeler, M. D." at San Francisco and Los Angeles, and such an order was issued May 2, 1934. (Jour. A. M. A., Oct. 6, 1934, p. 1084)

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ETIOLOGY, SYMPTOMATOLOGY AND DIAGNOSIS OF HEMATURIA*

By

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The presence of blood in the urine is a symptom of sufficient importance to impress both the physician and the patient with the necessity for an immediate investigation into the cause of the bleeding. Frequently the bleeding stops; the patient is lured, as a consequence, into a sense of security and postpones examination. Opportunity for early diagnosis and proper treatment is, therefore, lost.

Hematuria is but a symptom, and the cause must be sought, not only in the genito-urinary tract but in general diseases, such as purpura hemorrhagica, Banti's disease, etc.; also, in foci of infections, such as frequent colds and other nasopharyngeal conditions, frequently caused by hemolytic streptococci.

In this automobile age trauma is a frequent source of bleeding from any portion of the genito-urinary tract, especially in injuries to the pelvis and lumbar region. A specimen of urine should be obtained in all automobile accidents, and the presence of blood should at once direct us to the bladder and kidney regions. We have found quite a number of ruptured bladders and ruptured kidneys. These require early and active treatment.

Bleeding from the urethra may be a constant dripping of blood from the anterior urethra, or a rather free bleeding with or without clots in lesions of the posterior urethra, preceding the act of micturition.

The causes here may be urethritis, polyps, impacted stones, etc. All of these can be studied and treated with the cysto-urethroscope, or a simple endoscope.

The prostate is a most frequent cause of bleeding in men. The prostatic duct may contain stones, and here the bleeding follows intercourse. These patients usually consult their physician early. The prostate itself may show either a simple hypertrophy or a malignant condition. The symptoms are nocturia, slowness in starting the stream, dribbling at the end of micturition, and bloody urine. The nodular feel to a malignant prostate is very significant. However, a section can only give you assurance as to what type you have. Both the benign and the malignant cause urinary retention; bleed freely; and occasionally fill the bladder with clots. This formerly called for a cystotomy. At the present time these clots can frequently be broken up and washed out through a McCarty cysto-urethroscope. A cystoscopic examination of the entire bladder is necessary for a complete diagnosis.

Stones in the bladder may cause bleeding, especially the small stones which interfere with the urinary act, causing great pain and some bleeding. Stones are usually associated with a cystitis, diverticulum, ulcer, etc., and bleeding is nearly always present. In cystitis the bleeding is always at the end of micturition. Drugs, such as urotropin or turpentine, may also be the cause of bleeding.

Tumors of the bladder are the most frequent cause of massive, painless hemorrhages. This bleeding may be intermittent or constant; and may be free or in small quantities. Tumors of the bladder are either malignant or benign. The broad sessile tumors are usually malignant; the

*Part 1 of a symposium on hematuria, presented to the Association in annual session, Birmingham, April 17, 1934.

†Dr. Frasier died on June 14, 1934.

polyps benign. The differentiation can only be made by section. The use of the cystoscope is essential in these cases. Recently, we found an enlarged prostate and a polyp. The patient had complete retention, with the bladder filled with blood. The prostate probably caused the retention, and the papilloma the bleeding. Both were removed with happy results. Also, we had a polyp which completely filled the bladder. The cystoscope only met an obstruction and increased the bleeding. The tumor was easily removed after cystotomy.

The upper urinary tract is responsible for about fifty per cent of the hematurias. Stricture of the ureter is probably a frequent cause of bleeding. This can be diagnosed by passing catheters and olive-tipped bougies, or by intravenous urograms. A stone in the ureter is a most frequent cause of bleeding. Here we have severe colicky pain along the course of the ureter, requiring large amounts of morphine for its relief. Clumps of blood or pus or small fragments of tissue or a twisted kidney will give similar symptoms. External agents may cause bleeding from the ureter, such as an acute retrocecal appendix; or a tumor involving the ureter. Here also the cystoscope and x-ray will aid very materially in making the diagnosis.

The kidneys are important sources of hematuria. Nephritis is an occasional factor, especially in the hypertensive type, with marked arteriosclerosis. Polycystic kidneys are also a cause of bleeding. Hydronephrosis and pyonephrosis are frequently accompanied by rather marked bleeding. Pyelitis only occasionally causes bleeding. Stones are the most important cause of bleeding from the kidney, the small, movable ones being a more important factor in bleeding than the larger branched stones. The diagnosis can be made by the history, physical findings and the x-ray.

Tumors of the kidney always bleed sooner or later, unless the ureter becomes occluded. Various tumors may invade the kidneys. They are practically all malignant. The hypernephroma is most frequent. These tumors may occur at any age. Most of our cases have been in young people, and two in small children. The diagnosis can be made by a study of the

urine, pyelogram, urograms, etc. Occasionally, a mass in this region may be palpated and this may be the first evidence of the developing tumor.

Tuberculosis of the kidney is a source of bleeding in five per cent of the cases. The history of tuberculosis elsewhere, intractable cystitis, and the finding of the bacilli in the urine help to make the diagnosis certain.

There are a number of cases of bleeding for which no cause can be found. These have been classed as "essential" hematurias. This group is not large. As we study these cases over a longer period of time, we find many of them due to non-opaque stones, infections, strictures, and tuberculosis. Always, perhaps, there must be some cases for which there is no explanation. This should only stimulate us to greater effort.

MEDICAL AND SURGICAL TREATMENT OF HEMATURIA*

By
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Hematuria is a symptom—not a disease—and treatment should be directed ultimately toward the care of the underlying pathological condition. However, there are instances where the hematuria itself becomes a problem.

Blood in the urine, except in rare cases, should require prompt cystoscopic examination, when x-ray, kidney function tests and pyelography should be done. Cystoscopy should not be performed in recent injuries of the bladder or urethra, generally not in injury of the kidney, is not advisable in enlarged prostate, and may be postponed in cases where hematuria is a complication of some infectious disease or is a symptom of nephritis; or where, as in the case of polycystic kidneys or a palpable tumor of the kidney, the diagnosis is evident.

One reason that a prompt cystoscopic examination is generally necessary is that hematuria is so often the main if not the only symptom of growths of the urinary tract. In some of these growths, namely,

*Part 2 of a symposium on hematuria, presented to the Association in annual session, Birmingham, April 17, 1934.

papillomata, the hemorrhage may be exhausting. Pedunculated non-malignant papillomata of the bladder can be generally treated by fulguration through the cystoscope, bleeding stopped and small growths destroyed in one treatment. Often more than one treatment is required to completely destroy the growth. All papillomata should be fulgurated through the cystoscope. Those that do not respond to this treatment may then be coagulated by surgical diathermy through a suprapubic cystotomy, care being taken that fragments are not disseminated. The cases that do not respond readily to fulguration through the cystoscope are usually malignant or become so.

Bleeding from carcinoma of the bladder, and this is not so often the only symptom as in papilloma, may be temporarily controlled by fulguration, the application of radium through the cystoscope or deep x-ray therapy but the complete cure of bladder cancer is not so easy. Inasmuch as most of these growths are at the base of the bladder and close to the ureters, surgical excision is difficult or impossible, but those at the top of the bladder may be excised. In those about the trigone, coagulation with the high frequency current from above, with or without the implantation of radon seeds or deep x-ray therapy, should be used. Young states that with fulguration, radium, electrocautery and careful radical resection, 95% of benign papillomata, 75% of malignant, 50% papillary carcinomata and somewhere near 25% of infiltrating carcinomata are probably curable. Counsellor and Watkins (Mayo Clinic) report 600 cases: 165 (28%) were cured five years or more—74 were treated by excision or resection, 60% living 5 years or more; 17 were treated by coagulation, mostly infiltrating type, 16 living 5 to 10 years. The good results of diathermy in these 17 cases which were considered inoperable is substantiated by Kretchmer's report of 22 cases of carcinoma of the bladder living after 5 years, in 17 of which he used surgical diathermy, employing radium also in two. The use of radium and x-ray, except as a palliative to stop hemorrhage has not generally been attended with much success from a curative standpoint.

Removal of a growth near the ureter usu-

ally requires transplantation of the ureter or else it becomes occluded, requiring later nephrectomy.

Hemorrhage from growths of the kidney and ureter, whether benign or malignant, must be treated by nephrectomy, with partial or total ureterectomy. In removing kidneys with papillomata of the pelvis care should be taken that they are not opened and the growth transplanted into the wound, or that fragments are not forced down into the bladder. I had this happen once but the bladder growth was found early and removed by fulguration. As we know, many cases of malignant growths of the kidneys are so large when first seen that surgical removal is impossible. In a recent paper, Waters, Lewis and Frantz bring out the fact that cortical tumors of the kidney are radiosensitive and that after a course of intensive deep therapy will decrease in size and some inoperable ones become operable. The optimum time for operation is three weeks after a course of treatment; after this, if left alone, they begin to grow again.

An interesting problem in regard to hematuria in renal tumors occurs with polycystic kidney. This tumor is, as we know, always bilateral but often hematuria, either from its exsanguinating effect or by the production of pain, necessitates treatment. If the hemorrhage is unilateral and the function of the other kidney will support life, surgery should be attempted. As ureteral catheterization and pyelography may be dangerous in these cases, intravenous pyelography is useful and may be used as a fairly satisfactory index of kidney function (Braasch). The cyst from which the bleeding occurs may be drained or enucleated; or, if the kidney is sufficiently degenerated, nephrectomy should be performed. I have done this on several occasions with satisfactory results. In removing large tumors, such as these, good exposure should be obtained, either by a transverse or T-shaped incision, depending somewhat on the shape and size of the patient, as well as the tumor.

Hemorrhage coming from the prostate is often very troublesome. It may fill the bladder with clots adding to the dysuria already present. This hemorrhage may be spontaneous but is more often the result

of catheterization or attempts at catheterization. Spontaneous hemorrhage comes most often from a benign prostate. Usually hematuria will cease with adequate drainage, either with careful catheterization and irrigation of the bladder or by drainage through an indwelling catheter, provided the clots do not occlude the catheter. Even when clots are present in the bladder, by passing a cystoscope and applying suction they may be cleaned out and after irrigating the bladder a catheter may be put in and kept clean by frequent irrigations. It may sometimes be possible to fulgurate the bleeding point. However, I have found that it is best not to waste too much time on these maneuvers, but when there is active bleeding from the prostate, or when the bladder fills with clots, suprapubic cystostomy with local anesthesia should be performed. Usually with the bladder at rest the bleeding ceases and prostatectomy or transurethral excision can be performed in due time. The control of bleeding after these operations is not within the scope of this paper. Hematuria generally attends all injuries of the urinary tract and may require immediate stoppage to save life. Immediate operation for this is indicated in rupture of the kidney where bleeding occurs into the peritoneal cavity. Usually the bleeding is retroperitoneal and even with severe laceration of the kidney there is little danger of fatal hemorrhage, so that most cases of ruptured kidney can be treated palliatively with rest in bed and urinary antiseptics. Rest should be kept up for several weeks. Sherman advises six to eight since bleeding is liable to occur later. If hemorrhage persists, with fall of hemoglobin, say to 50%, operation should be performed, removing the kidney if necessary. Transfusion before operation may be desirable.

In injuries of the bladder and urethra, the danger, as a rule, is not so much from hemorrhage, although this may be severe as in rupture of the urethra, but from extravasation so that prompt operation should be performed. In ruptured bladder it should be repaired and drained. In ruptured urethra a catheter should be passed to the bladder if possible. Otherwise the bladder and space of Retzius may be drained. Although some surgeons advise

immediate repair of ruptured urethra this adds to the shock of operation and is rarely necessary or desirable, the urethra healing naturally, especially when a catheter is kept in place. Ruptured urethras demand continued dilatation after they are healed.

Many infections of the urinary tract are attended with hematuria, most especially gonorrheal or other infection of the posterior urethra and neck of the bladder. When hematuria occurs in gonorrheal urethritis, irrigations and injections should be stopped, the patient should be kept in bed when possible, and given frequent hot sitz baths. If the prostate is involved, hot rectal irrigations are most beneficial. In other acute or chronic infections of the bladder, hematuria is no contraindication to irrigations or other treatments.

A nice problem often arises in hematuria from tuberculous infection of the kidney. This may be persistent and large enough to produce severe anemia. However, unless it can be shown by pyelograms that the disease is destructive and limited to one kidney, tuberculous hematuria should not be treated surgically. General medical methods alone should be instituted. I have under observation now a man who several years ago had a persistent hematuria from one kidney and I removed the kidney which showed only miliary tubercles. He is in good health but the other kidney now shows pus and occasionally blood and the chances are that he would be better off if he had his other kidney.

Hematuria from stones in the urinary tract is rarely severe enough to cause much anxiety and is apt to be overshadowed by other symptoms—pain, infection, etc. Small stones usually pass but when they become impacted they should be assisted in their passage by inserting one or more ureteral catheters, injection of oil and other cystoscopic maneuvers. Occasionally they have to be removed by ureterotomy. Stones in the bladder should be removed, either by litholapaxy or suprapubic cystotomy. It is often difficult to decide what to do with stones in the kidney which are too large to pass but which produce only occasional hematuria or colic. Almost always these stones will continue to grow, and produce infection and destruction of the kidney.

They had best be removed either by pyelotomy or nephrotomy.

Hematuria may be severe in nephritis, especially the acute cases in children, but is present either macroscopically or microscopically at some stage in nearly all cases. In the acute phase magnesium sulphate, orally and intravenously, glucose solution, as a diuretic and for its food value, and a bland diet should be given.

To quote Minot: "With the disappearance of the acute stage of the disease the kidneys assume a fairly good function and there seems to be no reason to restrict the diet or fluid intake other than to meet the patient's wishes. The disease is accompanied by loss of plasma proteins and fall in red blood cells and hemoglobin. The diet should be such that these deficiencies are replaced. The low protein, low salt diets so frequently used in the past almost certainly do more harm than good."

Many treatments have been used for cases of so-called "essential hematuria." Inasmuch as such a diagnosis is an admission of the physician's diagnostic inadequacy, these cases should be treated conservatively unless the hemorrhage becomes alarming. Rest, removal of all foci of infection, lavage of the kidney pelvis with $\frac{1}{2}$ or 1% silver nitrate solution, large doses of iron and, if necessary, transfusions, both for their hemostatic and reconstructural effect, constitute good procedure. Barker has described a case so diagnosed in which injections of liver extract stopped the hemorrhage. The error of nephrectomy in such cases is demonstrated by the case of a young woman that was referred to me some years ago with marked and persistent hematuria. The hemorrhage was coming from one kidney which showed no evidence of stone or tumor. I removed the kidney which showed scattered inflammatory areas, non-suppurative and not tuberculous. She remained well for a year or more when she became pregnant. Then bleeding began from her other kidney. This ceased after therapeutic abortion. This was a case of infectious nephritis causing bleeding from one kidney. It should have been treated conservatively.

In conclusion it may be said that although hematuria occasionally may be an emergency, necessitating immediate stop-

ping of the hemorrhage, in general our efforts should be directed toward an early, exact diagnosis of the causative lesion or disease to which appropriate treatment should be applied.

ABDOMINAL INJURIES*

By

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The popularity of the automobile, along with the increase of all kinds of mechanical industries, has caused our age to be known as The Machine Age. With the advent of The Machine Age, accidental injuries to the human body have shown and will continue to show a great increase in number. Naturally there has been also, a corresponding increase in the number and severity of abdominal injuries.

I have undertaken to review the recent literature concerning injuries of the abdomen and have studied the records of some of the hospitals of the City. With the information thus gained, along with my own experiences, I have attempted to formulate a plan for the management of these conditions.

I have grouped these injuries, for the sake of convenience, from a morbidity standpoint, into two groups: (1) The Immediate, and (2) The Remote.

In the *Immediate Group* have been placed those cases that never react from their shock, those cases that are recognized from the first as being very serious and who live for only a short time following the accident. This is the type that receives a massive rupture of the liver, a tear of some large blood vessel, or explosive wounds with almost complete dissolution of the spleen or kidneys. These are hopeless from the start and are interesting only from a postmortem standpoint.

In the *Remote Group* have been placed those patients who have received an injury to the abdomen which may or may not be serious, who have reacted from their shock and who are in our hands for diagnosis and treatment for the existing pathology. These may present a picture in which their symptoms are clear cut, their physical find-

*Read at a meeting of the Morgan County Medical Society, Decatur, April 5, 1934.

ings well developed, and in which a correct diagnosis is easily arrived at; but more often their history is vague, their symptoms and physical signs are indefinite and may not even develop for hours or days. Here we have the material for a real detective story.

HISTORY

The history of the accident, the size and the shape of the object that struck the patient, on what part of the body the force of the blow was received, the position that the individual was in when he was struck, and whether his abdominal muscles were relaxed or contracted all give important leads as to the severity of the concealed injury.

Eichel studied the effects of abdominal trauma in dogs. He showed that with the animals anesthetized, even severe blows were innocuous when the feet were tied down tight stretching the abdominal muscles, regardless of whether the intestinal tract was full or empty; that only when the hind legs were loosened and the abdomen made lax were intestinal and mesenteric wounds produced. He showed also that severe injuries could be caused by blows struck on dogs that had previously been operated on and as a result had adhesions to the abdominal wall or between intestinal coils. From this it would seem then that the past medical history of an individual would have a great bearing on his ability to withstand severe abdominal trauma. It is reasonable to assume that an individual with an enlarged spleen, with a hydronephrotic kidney, a duodenal or gastric ulcer or partial obstruction from adhesions is much more liable to serious intra-abdominal injury than would another individual receiving the same blow, in exactly the same place and under the same circumstances, but having normal abdominal viscera.

CLASSIFICATION OF INJURIES

The types of injuries may be divided roughly into four classes:

- (1) Injuries to the abdominal wall
- (2) Retroperitoneal hemorrhage
- (3) Abdominal hemorrhage
- (4) Rupture of a hollow viscus

(1) *Injuries to the Abdominal Wall:* Injuries to the abdominal wall are rarely of any consequence. Their chief point of

interest here is that they may lead one to believe that intra-abdominal injury is present, when it does not exist. It is well to remember that the abdominal wall receives its nerve supply from the intercostals, the ilio-hypogastrics and the ilio-inguinals, and that contusion of these nerves, or hematomas pressing on their branches, can give symptoms that are misleading. Howard Kelly says that we should always palpate and pinch the skin along the course of these nerves, and have the patient raise his heels from the bed and then repalpate any tender areas of the abdomen. I found a number of cases where the abdomen had been opened and no pathology found. I could not help but feel, on reviewing these cases, that if the abdominal walls had been carefully examined doubtless many of them could have been spared an exploration.

(2) *Retroperitoneal Hemorrhage:* Retroperitoneal hemorrhages are caused by ruptures of the kidneys with hemorrhage or by injuries to the retroperitoneal tissues without injuries to the kidneys. Here the symptoms may simulate abdominal hemorrhage and in making a diagnosis it is very important to consider the site of the injury. If the force of the blow has been received over the kidney or lumbar region, one should suspect retroperitoneal hemorrhage as the most logical diagnosis. The kidney may be contused, lacerated, or pulpified; the peritoneum is rarely torn except in children. The expectant treatment is sufficient for 90% of the cases (Babcock). I have had five of these cases and have found records in the hospitals of many others; all were treated expectantly and all recovered. Suffice it to say: The history of trauma over the kidney, with the formation of a hematoma in the loin and passage of bloody urine, is not within itself sufficient evidence for a nephrectomy. The best guides are the quality and the rate of the pulse and the trend of the blood pressure.

(3) *Abdominal Hemorrhage:* Abdominal hemorrhage, naturally, can be caused from any kind of intra-abdominal accident. However, in this short paper, I will touch only on the two most common causes, namely, rupture of the liver and rupture of the spleen.

The liver is the organ most commonly injured by a non-penetrating blunt force. It has been estimated that such injuries occur in 59.9% of all injuries to the trunk. The liver is a closely knit structure, only slightly elastic, and due to its position and ligaments cannot easily escape the effects of violence. Excluding the massive hemorrhages, which I have touched on earlier in this paper, the immediate effects of liver hemorrhage are not particularly alarming, depending, of course, upon the size and location of the tear. The patient may even walk in to see you, pain and gradual collapse supervening later; or he may live for days, fairly comfortably, and then develop secondary hemorrhage with all its characteristic signs; or he may succumb finally to the continued flow of bile into the abdominal cavity. Here let me emphasize one thing: In every case of suspected liver damage the urine should always be tested for bile. There are numerous cases reported, which showed on postmortem examination, a rupture of the bile passages, which this simple test would have indicated.

The spleen holds the second place, numerically, for injury. It is estimated that rupture occurs in 33% of all injuries to the trunk. Crushing injuries may cause frightful trauma to the spleen, but bad jolts and the whipping action of its pedicle are responsible for most splenic damages. The hemorrhage may be massive and prove rapidly fatal, as can happen in severe liver damage; on the contrary it may be of a slow nature. The patient may react from his shock, have a normal pulse and blood pressure for hours or days and then develop secondary hemorrhage which is alarming and which demands interference. I had one patient of this type in which it became necessary to open the abdomen two days after the accident. Numerous cases have been reported of delayed hemorrhage from ruptures of the spleen. The longest one of these that I was able to find was by Patel whose patient developed signs of concealed hemorrhage on the sixth day and who was found at operation to have several tears in the spleen.

(4) *Rupture of a Hollow Viscus:* In a rupture of a hollow viscus, such as stomach, intestines, and urinary bladder, one

may be confronted with a difficult problem of diagnosis. Leakage from the stomach or duodenum can give the well known picture of a ruptured peptic ulcer—a chemical peritonitis with characteristic shock and board-like rigidity of the abdominal muscles. On the other hand, the intestine may spill out but a few drops of its contents during the first few hours due to the contraction of its circular muscle fibers. Later on, after paralysis of these circular muscles, intestinal contents are poured out and there is no occasion to mistake the diagnosis. I was first impressed with this fact when operating for gunshot wounds of the intestines.

Delayed rupture of the small intestines is by no means a surgical curiosity. It follows a contusion of the intestinal wall and may develop weeks later. I found a record of one of these cases in the General Hospital. Inlow reports one case recurring two weeks after the accident, Target a case in four days and Brewer one in twelve days.

We should be on the lookout for perforations in any case that has received abdominal trauma and always bear in mind that it is possible for them to have received a bruising of the intestinal wall and that they may later on develop a perforation. The obliteration of liver dullness in beginning peritonitis is not a constant sign; adhesions to the anterior abdominal wall might lessen its value. A flat x-ray plate of the abdomen to show air under the diaphragm should be done in all suspected cases, if possible, but a negative plate here, like so many other tests in medicine, does not mean that the condition does not exist. A high white count will not differentiate between peritonitis and abdominal hemorrhage, but it will show definitely that there is more than hysteria in a restless patient whose injury has been considered trivial.

A rupture of the bladder should be suspected in all cases in which there is a fracture of the pelvis or when the urine contains blood. Bladder ruptures are of two kinds, intraperitoneal and extraperitoneal, and can ordinarily be diagnosed and differentiated by a simple procedure. A catheter is placed in the bladder and a small amount of measured sterile water is injected.

ted. If you are unable to recover from the bladder the amount injected, you can then be reasonably sure that there is an intraperitoneal rupture. Again, if, on catheterizing the individual, you obtain a small amount of urine only and can feel the bladder to be still distended, then you can be practically sure that the urethra is torn from the bladder and that there is an extraperitoneal extravasation and rupture. I have recently had such a case following a car accident. I am aware of the criticism this diagnostic procedure has provoked, that one is liable to wash infected urine into the peritoneal cavity, but if the opening is intraperitoneal the urine has already contaminated the cavity and the introduction of a small amount of sterile water can at its worst only dilute it. I have used this in only one case and with no bad results. McKenna of Chicago has recently advocated the use of neoskiodan in suspected injuries of the genito-urinary tract. This appears to be an excellent procedure and I shall certainly try it in my next case.

THORACIC INJURIES WITH ABDOMINAL SYMPTOMS

No paper on the diagnosis of abdominal injuries would be complete without mentioning this phenomenon. Oftimes, following an intrathoracic injury, e. g., rupture of the lung, the picture that the patient presents is one of intra-abdominal accident, such as nausea, vomiting, prostration, and rigidity of the abdominal muscles. Beckman reports two cases of rupture of the lungs, having abdominal symptoms, that had abdominal sections performed on them and who died. Here the x-ray is of inestimable value and the diagnostic sign gotten out by Vale of Detroit has stood me in excellent stead. It is briefly as follows: If the injury is intra-abdominal, the rigidity of the abdominal muscles is constant; if the injury is intra-thoracic and the abdominal muscles are rigid, at the instant between inspiration and expiration, you can feel a softening up of the rigidity of the abdominal muscles. I have never had it to fail in a large number of cases.

CONCLUSIONS

The history of the case is of great importance, the laboratory findings and the past medical history of the patient are of great

value, but the most valuable of all is a careful physical examination. This should be done painstakingly and should be repeated every few hours until a definite conclusion can be arrived at. It is surprising how completely the physical findings will change from hour to hour. The final decision as to whether or not the patient needs an operation rests upon a correlation of all the facts and symptoms.

I am thoroughly convinced of the value of an abdominal exploration in cases of doubtful diagnosis, but on the other hand we should not take too lightly an exploratory celiotomy and should use all the methods that we are able to command before resorting to a "knife" diagnosis.

CARBOLIC ACID GANGRENE

By

Wm. R. MEEKER, M. D., F. A. C. S.

And

J. O. MUSCAT, M. D.

Mobile, Alabama

Carbolic acid was once the favorite antiseptic among surgeons, probably enjoying its greatest popularity as Lister's carbolic acid dressing. At one time it was also a general household remedy for the treatment of slight wounds and bruises. Even today it is not unusual to find carbolic acid among the medicines kept in the medical cupboard with which many homes are provided.

During recent years the use of carbolic acid has greatly declined due largely to the introduction of a whole host of more modern antiseptics. An enormous number of such substances have been advocated for various purposes, but in many cases perfectly satisfactory antisepsis is obtained with the more familiar and simple chemical compounds. Most proprietary antiseptic drugs are also disproportionately expensive and there is often a lack of precise information as to their composition and strength.

The use of carbolic acid, however, is attended with certain risks of which the public at large and even a few physicians are ignorant. It has been known for many years that gangrene occasionally results

from the application of dilute carbolic dressings to the fingers or toes. Reference to the literature upon this subject shows a fairly large number of such unfortunate accidents. As early as 1871¹ three cases of gangrene due to carbolic acid were reported. Harrington² saw eighteen cases in five years, and including these, collected a series of 132 cases. Undoubtedly many more instances of this condition have been seen by medical men who have not reported them. In present times, however, the profession has become generally cognizant of the dangers of carbolic acid and has discarded its use in favor of the safer antiseptics. A considerable decrease in the number of cases has taken place in the past 10 years, as evidenced by the fact that an exhaustive search of literature over this period reveals only one publication on the subject, and that of an Italian source.

The harmful action of carbolic preparations is best seen when dressings are wrapped around the fingers or toes, then moistened with aqueous solutions of carbolic acid and allowed to remain continuously for some time. Even a one per cent solution has been known to cause gangrene after 24 hours.³ In a moist compress of this sort the water evaporates, and when repeatedly moistened the carbolic acid becomes more and more concentrated.

Gangrene has also been observed with other carbolic preparations. Gangrene of toes has occurred from the application of carbolized vaseline.⁴ Two cases have been reported in which gangrene of a finger was caused by carbolized ointment.^{5, 6} Another case is reported in which gangrene resulted from injecting a ganglion of the thumb with equal parts of camphor and carbolic acid.

A preparation of phenol and camphor is recommended for external application in the proportion of 3 parts camphor and 1 part phenol. Advantages claimed for this preparation are that it will neither harm tissues nor cause pain.⁷ In spite of such claims the use of the compound known as "campho-phenique" has been observed to produce gangrene in the extremities,^{8, 9} and should, therefore, be used with the same caution as other carbolic preparations.

The appearance of the part is quite characteristic. The local anesthesia produced by the carbolic acid masks the destructive process occurring beneath the dressings and the patient may be unaware of the condition until they are changed days later. The skin is at first dry, hard, wrinkled and grayish white. Later it becomes darker and more shriveled. At the junction of living and dead tissue there is a zone of hyperemia and eventually a very definite line of demarcation forms. By this time the gangrenous portion is entirely black, contracted and of the consistence of hard leather. It has been shown that after the carbolic acid has deprived the epithelial cells and superficial tissues of their water it passes between the shrunken cells to the blood vessels which, after transitory contraction, become dilated. As a result of the dilatation the blood stream becomes slowed, a transudate is poured out into the subcutaneous tissues and consequently the nutrition of the tissues is interfered with, and as there is no absorption the poison accumulates within the tissues. Thrombosis of the vessels is thus regarded as the result of the necrosis and not the cause.

The following case histories differ in no essential from many others presented in the literature and will therefore be given very briefly.

CASE REPORTS

Case 1—D. P., a healthy farmer, 22 years of age, was bitten on the back of the middle finger of the right hand by a rattle snake (ground rattler). The wound was treated immediately by a

1. Wallace, David: Nine cases of carbolic acid gangrene, *Brit. M. J.* 1: 1110-1111, 1907.
2. Harrington, Francis B.: Carbolic acid gangrene, *Boston M. & S. Jour.* 144: 430-431, 1901.
3. Lexer-Bevan: *General Surgery*, D. Appleton & Co., New York, 1908, p. 8.
4. Buckmaster, F.: Case of phenol (carbolic acid) gangrene, *J. A. M. A.* 58: 102, 1912.
5. Brown, Everett J.: Carbolic acid gangrene, *J. A. M. A.* p. 1613 (Nov. 11) 1911.
6. Schussler, O. F. & Stern, M. A.: Gangrene of finger caused by 5% phenol ointment, *J. A. M. A.* 52: 628, 1911.

7. Hare, H. A.: *Practical Therapeutics*, Lea and Febiger, Philadelphia, 18th ed. p. 434.
8. Warbasse, J. P.: *Surgical Treatment*, W. B. Saunders Co., Philadelphia, 1: 320.
9. Freeman, Leonard: *Keene's Surgery*, W. B. Saunders Co., Philadelphia, 1: 338.

local application of chewing tobacco. A tingling in the affected arm immediately followed, then severe joint pains. About four hours later he became unconscious. He states he was unconscious for 4 days and that his arm was quite swollen and purplish up to the shoulder. Bichloride of mercury packs were used at that time, swelling regressed and he was up and around in 5 weeks.

A black core discharged from his finger, leaving a depression which never entirely filled in. About 6 weeks before entering the hospital a few blisters formed around the depression on this finger, also on the contiguous surface of the index finger. His physician wrapped both fingers in one dressing and advised keeping the bandage moist with a carbolic acid solution, strength of which cannot be ascertained. After using this solution 4 or 5 days he noticed his two fingers were shriveled, numb and entirely useless. During the past month he had used only bandages with no medication.

When seen at the hospital the middle finger was black and mummified for two-thirds of its length, and the index finger for one half (Fig. A). There was a definite line of demarcation on both fingers which showed evidences of infection at that point.

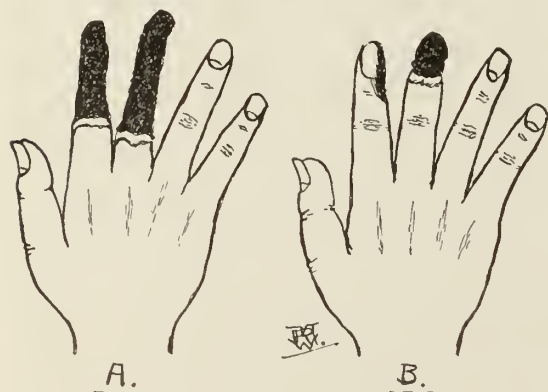


Fig. A. Gangrene from dressings of aqueous carbolic solution.

Fig. B. Gangrene from the use of campho-phenique.

Amputation of the middle finger was performed at the metacarpophalangeal joint, and of the index finger at the middle of the first phalanx. Recovery was uneventful.

Case 2—G. C. T., a man 31 years old, was a timber worker and country storekeeper. He had always enjoyed good health. Six months ago the tip of the middle finger of the right hand was crushed while loading timber. Healing progressed satisfactorily with the loss of the nail, but the new nail was deformed and painful. There was intermittent indolent infection at the nail margin and into the matrix which he treated with salves and compresses for about 4 months. A physician prescribed campho-phenique telling him to pour it on the finger tip three or four times a day and let it dry, using no dressing. At the end of a week the middle finger and medial surface of the index

finger had both become very painful, so that they both were dressed after moistening with campho-phenique. Later the nail of the middle finger was cast off, and about three weeks after beginning the use of campho-phenique the tissues of the terminal were brittle, contracted, wrinkled and hard, as was the medial surface of the index finger. He was probably 4 weeks under our care with dressings of 2% ammoniated mercury ointment before the gangrenous parts turned black and the line of demarcation became very definite (Fig. B). The fingers were very painful during this time.

Amputation of the middle finger at the midpoint of the 2nd phalanx had to be performed. The gangrenous slough separated from the medial surface of the index finger, and healing eventually took place with satisfactory function although this finger is considerably more pointed than normal.

COMMENT

Contributory factors, such as constriction or the employment of a waterproof covering, were not present in these cases. In some instances it is claimed that predisposition to gangrene already exists in the devitalization of tissues produced by the disease. But in these two cases there had been almost complete recovery from the effects of the original injury. Moreover, the contiguous healthy index finger in both cases had also become involved in the gangrenous process.

In both patients the carbolic preparation had been prescribed by a physician, and there is authority for the use of these preparations in the manner prescribed. Among other drugs, Beckman¹⁰ recommends the direct application of carbolic solutions to snake bites. The makers of campho-phenique also advise the application of this liquid undiluted to surface wounds, minor cuts, etc. They do not warn, however, of the serious consequences which may follow.

SUMMARY

It is now over 60 years since the first cases of carbolic acid gangrene were reported, and since then it has been observed in such frequency that text-books give phenol a special place among agents capable of causing gangrene. It is evident that local applications of phenol preparations are so dangerous that they should never be used. The fact that such preparations are

10. Beckman, Harry: *Treatment In General Practice*, W. B. Saunders Co., Philadelphia, 1934, p. 717.

often used without bad results makes them even more dangerous. If we had no other means of treating wounds and local infections we might be justified in using phenol preparations. But at present there are many other superior preparations which are entirely free from risk. The doctor in prescribing, and the druggist in dispensing carbolic acid in any form, should warn the patient of its dangers. It would be better if this drug could be entirely dropped from our list of useful local applications.

FILIFORM BROKEN OFF IN MALE URETHRA, RECOVERED

REPORT OF CASE

J. U. REAVES, M. D.,
Mobile, Ala.

One of the most exasperating accidents which can befall a surgeon is to have a filiform break off while dilating a filiform stricture. Recently, one of my colleagues, Dr. Geo. R. Livermore of Memphis,¹ designed a filiform containing a copper shaft all the way through it in order to prevent this accident from happening. This accident has happened in my hands three times, and the ease with which the last one was handled prompts me to make this case report:

Rev. L. M., col., age 55, referred by Dr. W. G. Carnathan, Butler, Ala., patient robust, weighing 200 pounds, 5 ft. 7 in. high, well preserved, with a negative history and physical examination other than his urologic history and findings. A filiform was passed with a great deal of manipulations, after which a 24 F LeFort sound was attached and introduced through urethra to bladder, encountering a spasmodic, tortuous stricture at the bulbo-membranous junction. This sound was withdrawn and sound disconnected, leaving the filiform within the urethra. A 26 F LeFort was then attached and failed to pass into the bladder or through the stricture owing to the resistance met with. On removing this sound it was discovered that the filiform had broken off just below its attachment to the sound. There was considerable hemorrhage, as is the rule in these forcibly dilated stricture cases, and I advised the patient of what had happened, had him try voiding, with the hope that the filiform might possibly be in the urethra far enough to be voided with the urine, but such was not the case. The patient was dressed and given a urinary antiseptic and advised to return to my office the fol-

lowing day. When he returned the next day, the pleasure he derived from his urinary stream completely overshadowed any discomfort the filiform might be causing. He had not voided the filiform; hematuria was absent. I did nothing for him this time other than to instruct him further on points not clear to him and asked him to return two days later. Upon his return this time he was comfortable and voiding freely. Hematuria was absent. I again instructed him to return three days later, advising that I would remove the filiform cystoscopically under intravenous anesthesia. I instructed him to take milk of magnesia for a cathartic before going to bed the preoperative night, omit his dinner and report at three in the afternoon. He was placed on cystoscopic table when he came in and prepared for cystoscopic examination. A filiform was introduced into the urethra.

1 gm. of soluble evipal powder was dissolved in 10 cc. of fresh sterile distilled water and 7 cc. of this solution were slowly injected intravenously by Dr. I. M. Wise, using the right median basilic vein. Anesthesia was almost immediate. A 24 F LeFort sound was fastened on a filiform and I was surprised at the ease of introduction of this sound through the urethra. In quick succession a 26 F and 28 F LeFort sound were likewise introduced into the bladder with the same ease as was noticed when the 24 F LeFort was introduced. The 28 F LeFort sound and filiform were both withdrawn and an operating Brown-Buerger cystoscope was readily introduced. The bladder was irrigated until the fluid returned clear, and telescope introduced within the sheath with alligator jawed rongeur in place, whereupon the filiform which was lost within the bladder upon this patient's first visit to my office was easily located and grasped with the alligator jawed rongeur and removed together with the cystoscope.

Anesthesia was perfect and relaxation thorough as evidenced by the ease the LeFort sounds and cystoscope were introduced. The patient slept only ten minutes and awoke bright, quick, and clear, happy to know that all instrumentation was over with and the lost filiform had been removed. He was transferred to the recovery room where he remained for forty-five minutes after which he dressed himself and went home. No untoward postoperative effects were evidenced.

303-4-5-6 Van Antwerp Building

The Specialist—The problem of specialism is one that has been very thoroughly discussed in many quarters and I feel that I can add very little to what has become common knowledge. Specialism is an important and necessary feature of modern medical service. Statistics indicate that at the present time about 40 per cent of medical graduates limit their practice exclusively to a specialty within five years after graduation. Most fields of clinical specialism are already over-crowded and the present trend will unquestionably make matters worse.—*Flippin, Virginia Med. Monthly, Jan. '35.*

1. Livermore, Geo. R.: A non-losable filiform, *J. Urol.* 30: 679-680.

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GASTRO-INTESTINAL MANIFESTATIONS OF RENAL DYSFUNCTION

In men past fifty whose first symptoms are anorexia, nausea, vomiting, diarrhea or constipation, with or without fever, unless known to be due to food infection, or some other demonstrable causes, an examination of the prostate, or catheterization of the bladder for residual urine, may clear up the diagnosis. Not infrequently the first symptoms of urinary obstruction and retention due to an enlarged prostate are nausea, vomiting and diarrhoea, and the patient may be saved from permanent renal and myocardial damage, and perhaps an early death, by recognizing the nature of the disease and administering the appropriate treatment. In such cases operation for the relief of the prostatic obstruction should be deferred until all evidences of uremic symptoms have subsided. The toxic patient with gastro-intestinal manifestations of uremia is a bad risk for any kind of prostatic operation.

It is the general practitioner who first sees the patient with early manifestations of failing kidney function; and in such cases if he recognizes that the anorexia, vague abdominal discomfort, nausea, vomiting, diarrhea and sometimes obstinate constipation, are due to metabolic changes

of renal origin, he can institute treatment that may prevent irreparable damage to the kidneys and myocardium. If he fails to make the correct diagnosis in such a case, and treats the symptoms as of primary gastro-intestinal origin allowing his patient to become dehydrated and toxic from retained urinary products, his trusting patron may be doomed to an early death from uremia or a damaged myocardium. A diagnosis of "abdominal" or "gastro-intestinal flu"—a disease that does not exist—in such cases is sometimes a fatal error; because it delays the realization of the underlying renal pathology until it is too late for effective treatment.

In any case of nausea and vomiting, with either constipation or diarrhea, in a man or woman past fifty, in which such symptoms cannot be accounted for otherwise, it is safest to consider that they are due to renal dysfunction and treat the patient accordingly. The prompt administration of sufficient fluids and soluble carbohydrates in such cases saves lives. If the patient cannot retain water and soluble carbohydrates, such as coffee or tea, orange juice, lemonade, orangeade, dextrose or glucose (corn sugar or corn syrup) solutions—at least three or four quarts of fluids a day—dextrose solutions may be given by hypodermoclysis (five per cent solution) or intravenously (five to ten per cent solution). If there is constipation, plain water may be given by proctoclysis after a cleansing enema. It is futile, and even harmful, to give glucose or other carbohydrates per rectum (deTakats,¹ Harris²). In cases of suspected renal damage, salt solutions should be given sparingly, not more than 1000 cc. a day (Trout³). While sufficient fluids should be given, it is unsafe to give more than 4000 cc. a day because of the danger of "water intoxication" (Roundtree⁴) or of overworking dam-

1. deTakats, Geza: Push fluids; the surgeon's postoperative order, *Am. J. Surg.* 11: 39-44, (Jan.) 1931.

2. Harris, Seale: The futility of glucose enemata, *Ed., J. M. A. Alabama*, 1: 260-261 (Dec.) 1931.

3. Trout, Hugh: Proctoclysis; an experimental and clinical study, *South. M. J.* 6: 791-794 (Dec.) 1931.

4. Roundtree, L. G.: Water intoxication, *Arch. Int. Med.* 32: 157-174 (1923).

aged kidneys, or of overwhelming a toxic and failing myocardium.

Of course, it is desirable to make renal function tests (phenolsulphonaphthalein) and blood chemistry studies (non-protein nitrogen, urea, creatinin, carbon dioxide combining power of blood plasma, etc.) in such cases to determine the functional capacity of the kidneys and the character and degree of the toxemia (uremia, azotemia, acidosis or alkalosis); but the general practitioner, who may not have laboratory facilities available, should play safe by treating the patient with gastro-intestinal symptoms of suspected renal origin as if he were positive of the diagnosis of primary kidney disease.

Renal disorders of gastro-intestinal origin, particularly kidney insufficiency, may result from pyloric, or high intestinal obstruction (Friedenwald and Morrison⁵). Conversely, it is well to remember that the toxemias associated with alkalosis, and which are such dangerous complications in neglected duodenal ulcers with pyloric obstruction and gastrectasis, may also be associated with renal insufficiency. In such cases thorough and perhaps prolonged preparation of the patient for operation will lower the mortality in gastric surgery. Hasty operations on undernourished, dehydrated ulcer patients with gastric retention should not be considered except in such an emergency as perforation. Neither the general practitioner nor the specialist should ever lose sight of the very intimate physiologic relation between the kidneys and the digestive system.

S. H.

CONSERVATIVE TREATMENT OF LATE TOXEMIAS OF PREGNANCY

For a number of years the conservative treatment of the toxemias of pregnancy has been steadily gaining in favor and additional accounts of the efficacy and safety of the conservative method continue to appear. McNeile¹ has recently published a

5. Friedenwald, Julius, and Morrison, Samuel: Clinical observations on the relation of gastric and renal disorders. *J. A. M. A.* 99: 524-529 (Aug.) 1932.

1. McNeile, Lyle G.: Conservative treatment of late toxemias of pregnancy, with special reference to the intravenous use of magnesium sulphate, *J. A. M. A.* 103: 548 (Aug. 25) 1934.

report of his experience in dealing with 799 cases of late toxemias of pregnancy and he holds that "the definitely lowered maternal and infant morbidity and mortality in clinics employing conservative methods is well established."

McNeile says that "the treatment of any disease of unknown etiology must of necessity be empirical, and this is particularly true of eclampsia." And he goes on to state that "the Stroganoff treatment, sedation with morphine and chloral, with non-interference with pregnancy, is the basis of conservative treatment today," though he, unlike Stroganoff, interdicts the use of chloroform because of its toxic action on the liver.

McNeile says that in his clinic eclampsia is now very rare in patients who have registered early in pregnancy and who have therefore been under competent observation. He then outlines his routine treatment of pre-eclamptic patients, which, in brief, is as follows: "Absolute rest in bed is necessary." "A milk diet is used" because "I am definitely of the opinion that from the clinical standpoint an intake composed exclusively of milk and water is advantageous." "The fluid balance must be maintained by accurately measuring the fluid intake and output." The bowels must be kept open and urinalysis of a twenty-four hour specimen is made daily. The blood pressure is taken three times a day or oftener. Twenty cc. of a 10 per cent solution of magnesium sulphate is administered intravenously when the systolic blood pressure reaches 150 or higher. Three hundred (300) cc. of a 25 per cent solution of dextrose is given intravenously from one to four times daily. Very restless patients should be given chloral hydrate, 20 gm., and sodium bromide, 60 gm., by rectum. "If symptoms improve, we add a basic diet, and place the patient on a very restricted regimen. If the symptoms do not improve, or become more severe . . . we ordinarily induce labor by artificial rupture of the membranes, or with a Voorhees bag."

"Cesarean section is rigidly reserved for cases in which it is definitely indicated for some obstetric condition other than toxemia of pregnancy, and for patients with fulminating toxemia."

The same general orders usually apply to the management of patients with convulsions. In addition the patient is placed in a private room which is darkened and absolute quiet is insisted upon. An attendant is with the patient constantly and gentle restraint is used during the convulsions. Magnesium sulphate is given intravenously as soon as possible after the first convulsion and is repeated every hour until the convulsions are under control. Inhalations of pure oxygen are given after each convulsive seizure and are continued until respiration is normal. If the patient is in labor, nitrous oxide or ethylene analgesia is given during contractions if the restlessness cannot be adequately controlled by the rectally administered chloral and bromide. "If the patient is in the second stage of labor and progress is not being made, she is delivered with forceps or by other indicated procedures."

The author refers to the fact that for many years there was a widespread belief that magnesium sulphate was a dangerous respiratory depressant, but states that during the eighteen years which he has used it intravenously he has "demonstrated the

safety of the procedure, and its effectiveness in allaying restlessness, controlling the convulsions of eclampsia and increasing the urinary output. In a very large portion of patients there is an immediate and surprising improvement in the general toxic symptoms." And, of the intravenous injection of dextrose, he says that "regardless of the controversy as to the exact interpretation of clinical and laboratory data, the use of carbohydrates in the treatment of toxemias of pregnancy has been the basis for the successful treatment of many severely sick patients."

The non-surgical treatment of eclampsia has been gaining ground steadily for years and, in view of the splendid results obtained, will probably continue to do so. Fortunately all of the procedures here outlined can be carried out in any hospital and many of them can even be used in the home. Cesarean section, once so indiscriminately resorted to in combating the toxemias, will play a decreasing part because, in the words of McNeile, "the effect of eliminating radical surgery, except when clearly indicated, has been thoroughly demonstrated." W. W. W.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

WHY PARTITION THE HUMAN BODY?

J. N. Baker, M. D.

State Health Officer and Secretary of the
State Board of Medical Examiners.

In the November issue of the State Journal under the Association Forum appeared a brief capitulation of a few of the more important things, from a public health point of view, which should engage the attention both of the profession and of the legislature. All of the topics dealt with in that article were of a definitely *constructive* nature, such as the urgent need for more adequate legislation to care for Alabama's problems of tuberculosis, rabies, and county health work. Copies of the article have been mailed to all doctors and to each Senator and Representative, with the request that opportunity be cre-

ated for considering and discussing them before the legislature began its deliberations in January. These have a direct bearing on the *health problems* of the State, in which the entire profession has a *distinct responsibility and voice*.

There is another responsibility, which has, by law, been delegated to the organized medical profession, of equal, and possibly greater importance than this; viz., the regulation and control of medical licensure in the State. In 1877 by an Act of the General Assembly of Alabama the State Medical Association was made the instrument for regulating and enforcing the medical practice act. The law clearly and specifically states that any one proposing to treat diseases of human beings by any system of treatment whatsoever shall procure

a certificate of qualification from the State Board of Medical Examiners, such certificate to be based upon examination, *in writing*, in certain basic branches of medical learning. The subjects covered embrace those things about which any one who attempts to treat human beings should have some knowledge. An applicant is not examined in materia medica or therapeutics; as the law is concerned *not in the type of treatment to be administered* but in seeing that *any one administering any treatment whatsoever* shall first have knowledge of the basic, fundamental branches upon which all sound treatment should rest. Once this has been shown, the applicant is free to employ such type of treatment as he may elect. Furthermore, while the law does exact rigid educational qualifications from those of the regular medical school, these requirements are specifically waived in the case of all applicants not of this school. Any applicant from another school, such as osteopathy, chiropractic, chiropody or any other, is now free to appear before this board and to prove his fitness in these basic subjects. Each applicant taking the written examination is assigned a number, and the one grading the paper has not the remotest concept of whose paper is being reviewed. Should the applicant attain a general average of seventy-five on all subjects examined upon, he is issued a certificate which entitles him to *treat diseases of human beings according to the methods which he proposes to practice*, but does not entitle him to prescribe or administer drugs nor to practice *major surgery*.

Throughout the years these high standards in Alabama have been upheld and largely because of the confidence of the people and of the succeeding legislatures in the ability of the medical profession to fairly and impartially administer not only its health affairs but also to protect its citizens from the dangers and ravages of illy or inadequately trained persons greedy to capitalise upon the illnesses, credulity or ignorance of the public. So flooded now is the field of healing with "doctors" of this, that or the other persuasion that the general public, searching for sane and safe medical counsel, is as likely as not to become bogged in a quagmire of quackery. In such circumstance, a certificate from a

reputable licensing board constitutes a real guarantee of safety which should never be ignored by one seeking medical advice. Consequently, legislators should think rather in terms of safeguarding the health of their people than of bestowing legal recognition upon any particular group seeking short cuts and praying for exemptions by setting up their own separate "boards of control."

In the matter of legislation when dealing with the human body and its ailments, it is neither necessary nor wise to parcel it out piece-meal, as head or foot, back or front; nor by *the type of treatment* to be applied in an effort to restore health. Every sound approach to regulatory control in the application of treatment to the human body should view it as a distinct entity and in the whole and without attempt at dismemberment. The human body is so delicately constructed and its functioning parts so interwoven and finely attuned as to demand, on the part of any one undertaking corrective measures, accurate knowledge and understanding of the whole. If the above reasoning be sound and effort made to apply this logic to a bill likely to be introduced in the forthcoming legislature, styled "Chiropody Practice Act", only one fate can befall it. Let us briefly glance at some of the provisions of this proposed bill:

The human foot and leg—which, anatomically speaking, carries one to the knee joint—constitute the definitive playground of this particular group—one marvels why the hand and arm were not also brought within the scope of the bill, as the word "chiropody" is formed by combining the two Greek words meaning "hand" and "foot." Within the anatomical limitations prescribed in this bill, the followers of chiropody are given tremendously and dangerously wide latitude, the only prohibition being amputation. Free use can be made of the scalpel and scissors; the unlimited prescribing of drugs; the employment of cocaine, novocaine and other local anesthetics; the free and untrammelled use of all electrical devices including the x-ray. Nothing in the bill precludes the handling of fractures, either simple or compound; nor the treatment of deep surgical infections of the lower extremity nor club foot or ten-

don operations under local anesthesia. In the matter of administering the provisions of the bill and for regulatory control, the Governor is to appoint three chiropodists whose sole qualifications shall be that they have been in the State at least two years. This board of three, with no other prescribed qualifications, to hold examinations, *which may be either written or oral or clinical* in the following subjects: anatomy, histology, physiology, pathology, bacteriology, chemistry, pharmacy, and materia medica, surgery, chiropodial therapeutics and clinical chiropody and *such additional subjects as shall subsequently be taught in recognised colleges of chiropody and as shall be pertinent to the practice of chiropody*. The similarity of subjects covered by this board of three bears a striking resemblance to those now embraced by the existing Board of Licensure, composed of ten (10) physicians, there being omitted only obstetrics, diseases of the eye, ear, nose and throat and medical jurisprudence and hygiene. Under the provisions of the bill, however, these and others may be added at any time, in the discretion of the board and as exigencies might demand.

One of the arguments advanced by the proponents of this legislation is the need for giving protection to our people from a swarm of incompetents seeking to administer relief to tired, aching pedal extremities. The person of average intelligence may be relied upon to give at least as much consideration to an impediment in his own locomotion as he would to his automobile; and, in dealing with the latter he has long since learned the futility and extravagance of the "pseudo" or self-styled mechanic. What our people really need to be rescued from is the horde of self-anointed, so-called "doctors" who, through legislative enactments, are attempting to short-circuit the long, labourious path which has to be trod by all, before they are actually safe and competent to cope with diseases of human beings.

Again, let us look, for just a moment, into the initial offing of this valiant move to rescue our suffering populace. All persons, under the provisions of this bill, even in the absence of any previous professional or scholastic training of any sort,

who might have been practising chiropody for one year, may, upon the payment of a fee of twenty-five dollars (\$25.00) and within the first ninety days, be licensed by this board of three. Nothing in the law prohibits a blacksmith or a hod-carrier, who might have been posing as a chiropodist for one year, from being christened "doctor" in Alabama and merrily tripping along and plying his trade. One might suppose that in the matter of making a beginning, some gesture at least would have been made as to certain qualifications for training for those to be initially admitted. A careful search fails to reveal it.

Other objectionable features to be found in this proposed legislation might be cited. But why? With an already existing Licensure Board, fairly and impartially administered and with standards only sufficiently high and rigid to afford security to our people against the imposter or the inadequately trained, why consume the valuable time of our law-makers with superfluous legislation of this sort? Any group seeking the consignment of so large and important a segment of the human anatomy to its care, is, in truth, engaging in the practice of medicine, within the legal and judicial interpretation of the term, and should be required to measure up to those standards now fixed by law for any and all who propose to handle the ailments of human beings.

NOTICE

THE NEXT ANNUAL SESSION OF THE
ASSOCIATION WILL CONVENE IN MOBILE,
APRIL 16-18.

* * *

PRELIMINARY PROGRAM NOTES WILL
APPEAR IN AN EARLY ISSUE OF THE
JOURNAL.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

MEDICAL AND PUBLIC HEALTH ATTITUDE TOWARD SMALLPOX VACCINATION AND DIPHTHERIA IMMUNISATION

In the August issue of the New England Journal of Medicine, Drs. George T. Palmer and Mayhew Derryberry contribute a very interesting article with the above title. The data made use of and the conclusions drawn by these writers are based on a survey in connection with the White House Conference. This survey showed that among the preschool children of 156 cities only *twenty-one per cent* had been immunised against diphtheria and an equal percentage against smallpox. These low proportions for these two important communicable diseases prompted an investigation of the attitudes of the immunising agencies toward these two measures. From this study, the authors point out certain weaknesses in the present prevalent practices and make helpful suggestions for improvement. This investigation shows that immunising agencies, on the whole, seem decidedly more interested in protecting the young child against diphtheria than against smallpox. In other words, the prophylactic agencies are not pushing vaccination and immunisation to the same degree. It is probably natural, because of the newness of diphtheria immunisation as compared with the century and a half old vaccination, for health agencies to favour and promote the former; but this should not be done to the detriment or neglect of the latter. Even though the incidence of smallpox has been reduced to a low point, is it likely that this low level can be long held, if widespread vaccination among young children is not continued? Another valuable point made by these authors is that when rendering these services to a family, real advantage should be taken of this favourable opportunity of emphasising the meaning not alone of this particular service but also other features of the health program. If efficient education accompanies immunisation, then protection for one child should more easily permeate through the entire family. Whereas, if the

educational opportunity is slighted, the individual service given is likely to be accepted solely as such and penetrate no further.

These authors conclude this study with the following summary, from which every health officer and nurse should learn the important lesson of never neglecting the educational value of each and every act of their own:

"1. The coincidental occurrence of smallpox vaccination and diphtheria immunisation in the same children is very low. About one out of ten of our preschool children are protected from both diphtheria and smallpox.

2. Two causes suggested for the low amount of complete protection are the following:

(a) Agencies engaged in administering the immunity measures are not stressing vaccination for the younger children.

(b) No efficient educational program on the value of immunisation and vaccination accompanies the immunising procedure. It is more in the nature of a health service rendered to the family."

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

DIPHTHERIA CULTURE OUTFITS

For a number of years the Bureau of Laboratories has supplied for diphtheria culture work a sterile swab enclosed in a glass tube. On the whole this outfit has proven fairly satisfactory, but there is always the question of drying which may influence the results. For that reason a number of practising physicians have requested the culture medium itself.

In furnishing Loeffler's slants on a large scale the drying of the medium is a factor which has even more significance than the drying of the swabs. Several commercial companies have placed on the market slants in sealed tubes, some of which contain the swab as well. Such an outfit, because of the expense and time involved, would be impracticable for the Bureau of Laboratories. Therefore, it has seemed advisable to send out, when requested, the diphtheria culture medium slanted in small test tubes which are sealed tightly with rubber caps. It is believed that the medium will retain indefinitely, under ordinary conditions, its normal content of moisture in such a container.

Realizing the fact that not all practising physicians will desire the culture medium but will continue using the swabs alone, it is not the purpose of the Bureau of Laboratories to send these outfits out routinely. They will be supplied only on special request.

The inoculation of these tubes is a process requiring considerable care if satisfactory results are to be obtained. The swab after being applied to the throat or nostrils should be passed lightly over the whole surface of the slant rotating the swab in the process. It is important that aseptic precautions be taken. If a direct smear is desired, both the inoculated medium and swab must be sent to the laboratory. Inasmuch as the mailing containers now being furnished will hold only one tube it is suggested that the swab be left in the tube of medium, but raised slightly above the slant. This may be accomplished by breaking off a small portion of the upper part of the swab so that the rubber cap can be replaced.

The Loeffler's slants will be furnished in the double mailing containers. Tubes containing swabs may be requested in lots of a dozen or more and will be supplied without the cardboard and tin containers.

BUREAU OF PREVENTABLE DISEASE CONTROL

D. G. G'ill, M. D., Director

THE HOME ISOLATION OF TUBERCULOSIS CASES

That tuberculosis is communicable has been recognized since the discovery of the tubercle bacillus by Koch. Contact with an open case of the disease is the most important factor in the spread of this disease and it is the factor that is responsible for so much of the "family tuberculosis." At one time it was believed that the disease was hereditary, but we now know that such is not the case. True, certain structural defects of the chest may be inherited which predispose to the disease, but, in addition, there must be an infecting dose of the organism. Tuberculosis comes from tuberculosis.

Prevention of the disease, therefore, demands an attempt to keep the patient from

infecting those in contact with him. With a disease as chronic as tuberculosis it is not feasible to enforce strict isolation and quarantine. A case can, of course, be kept out of certain occupations that would endanger large groups. Food-handlers and teachers are particularly dangerous to the public and are forbidden occupations.

It is to his most intimate friends and contacts, however, that the tuberculosis patient is least friendly and his family is the greatest sufferer. If possible, isolation and treatment in a hospital or sanatorium is the best procedure, but financially this is beyond the reach of most. It only remains then to make the best of available facilities and treat the patient at home. At the same time isolation procedures can be instituted. A separate room may answer the requirements or a screened porch may be built at moderate cost. The portable one-roomed cottage has been adopted by many counties and is recognized as an effective means of isolation. The patient can enjoy the companionship of his family without, at the same time, infecting them. He can have his own bedding, his own dishes, and his own quarters without being out of touch with his home and its activities.

The Alabama Relief Administration recognized the building of these Burr-type cottages as a worth-while project and in various counties assisted in building a number of them. A recent questionnaire revealed that some sixty cottages were in use throughout the State with others being constructed. Not a large number to be sure, but the effective use of even this number will play an important role in the fight to combat the family spread of tuberculosis.

In some instances there is a hesitancy on the part of the patient to use the cottage which labels him a case of tuberculosis, but a recommendation from his physician will do much to overcome this aversion.

Bacteriophage In Intestinal Infection—In outbreaks of bacillary dysentery bacteriophages active against the organism causing the outbreak were isolated from the stools of 60 to 80 per cent of those showing clinical symptoms, when stools were obtained during the second week after onset.

In outbreaks due to other causes bacteriophage isolation did not yield any useful information.—*Feemster, Am. J. Pub. Health, Nov. '34.*

BUREAU OF SANITATION

G. H. Hazlehurst, Director

MALARIA CONTROL IN RURAL SECTIONS

Malaria is yet a problem in Alabama. Control measures must be carried to even greater accomplishment than has been obtained in the past.

During 1932 the malaria case and death rate in Alabama reached the lowest point in history. Since that time, however, there has been a perceptible increase in the disease for which there appears no fully satisfactory explanation. This has been true of other Southern States, according to reports, and is rather discouraging in view of the extensive drainage work done recently through expenditure of Federal funds for relief. A consoling fact, however, is that we are definitely sure the sickness and death rate from the disease would have been much greater had the drainage work not been done.

The picture of Alabama today in reference to malaria is one which presents the disease as occurring chiefly in certain rural areas. The urban population has been protected by drainage, the consummation of which has been diligently promoted by the health department over a period of some twenty years.

The question arises, "What can Alabama now do to control malaria in the rural sections, where economic conditions at best are none too good?" The answer lies in coordinated effort to further four recognized control measures, given as follows:

First, there are many ponded areas, known to be breeding areas for the malaria mosquito, which could be drained. Cooperation with public agencies and private individuals in the elimination of such places is indicated. Drainage remains the most positive and effective control measure available. The slogan, "No Mosquitoes, No Malaria," is as true and up to date as it ever was and can, therefore, be used as a guide in control work.

Second, those families living in rural sections where malaria is prevalent should screen and otherwise mosquito-proof their houses. A half job, however, will not be effective as mosquitoes search out the tiniest opening in their efforts to gain entrance and a blood meal. In mosquito-

proofing it is important to use full length screens over the windows, of a wire cloth having at least 16 meshes to the inch. Tight fitting screen doors opening on the outside are essential, as well as ceiled rooms. Bed rooms are the most important to effectively mosquito-proof as the malaria mosquito bites only at night and usually after people have retired. Effective mosquito-proofing will lessen the chances of malaria infection at least 50%.

Third, attention is directed to the importance of using a fly or mosquito spray daily in the house during the summer time. Malaria mosquitoes having gained entrance to the house rest on the walls and ceilings during the day time where they are easily killed by the use of the spray. There are many good sprays on the market. The County Health Department can supply the formula for an effective homemade spray, which can be made up at reasonable cost. Wholesale use of spray has been used heretofore in checking malaria transmission in limited areas where mosquito control was not feasible. More recently, spray was used in two Alabama towns where a mosquito-born disease, dengue fever, made an appearance.

Fourth, adequate treatment of the infected individual is most important in the control of malaria. Advancement has recently been made through the development of two synthetic drugs. Each of these drugs, as well as others, however, has a definite place in the treatment of malaria. Accurate diagnosis and differentiation is essential to proper treatment.

It is only through the diligent prosecution of these four measures that malaria will be further reduced in this State.

G. H. H.

Prevention Of Syphilis—A knowledge of the possibilities of prophylaxis should be widespread and physicians should be prepared to give prophylactic treatment to those who ask for it.

Our main responsibility is to find cases early, to bring them under treatment, and to keep them under treatment until cured. The barrier of early and complete treatment is essential to the control of syphilis, and careful epidemiology is essential to the erection of this barrier.—*Earp, Am. J. Pub. Health, Nov. '34.*

BUREAU OF VITAL STATISTICS

Leonard V. Phelps, Director

RECORDED DEATH RATES PER 100,000 POPULATION FROM TUBERCULOSIS (ALL FORMS) BY COUNTY AND
COLOR: ALABAMA

COUNTIES	TOTAL			WHITE			COLORED		
	1924-1928	1929-1933	1934†	1924-1928	1929-1933	1934†	1924-1928	1929-1933	1934†
ENTIRE STATE	93.0	81.4	62.1	53.9	45.8	37.4	160.5	145.4	106.5
Autauga	69.8	55.6	64.9	34.1	24.9	22.4	97.2	80.3	99.2
Baldwin	75.8	41.1	57.3	63.1	36.0	58.7	123.6	57.1	52.8
Barbour	73.0	54.8	39.9	31.6	24.6	7.2	99.9	77.1	64.1
Bibb	59.0	56.8	28.9	34.8	30.2	14.4	106.5	110.5	58.2
Blount	46.7	57.2	24.1	43.4	54.3	25.0	101.5	130.1	
Bullock	128.7	95.9	99.9	72.6	23.4	47.0	141.4	115.5	114.3
Butler	90.4	77.9	55.8	28.7	39.8	38.3	161.7	118.2	74.3
Calhoun	100.3	85.6	78.2	75.4	57.0	46.1	177.1	183.9	188.0
Chambers	80.2	63.6	33.1	56.6	40.2	4.7	107.7	91.5	66.9
Cherokee	73.2	51.4	54.4	64.6	48.9	54.4	166.5	76.5	54.6
Chilton	53.6	40.3	19.7	41.5	25.0	23.5	111.0	120.2	
Choctaw	62.0	82.9	53.6	26.2	43.1	64.7	94.9	115.6	44.5
Clarke	69.7	66.9	73.0	36.8	22.6	40.4	99.2	107.2	102.8
Clay	28.6	38.3	28.1	26.7	27.9	33.2	40.0	95.6	
Cleburne	41.9	49.7	31.0	34.8	42.9	33.0	163.2	156.0	
Coffee	35.5	21.9	14.9	22.3	13.1	15.1	86.8	54.6	14.0
Colbert	71.7	93.1	83.7	39.3	51.4	60.8	135.6	198.1	141.5
Conecuh	47.2	55.6	69.8	14.8	13.9	27.5	87.9	109.6	124.6
Coosa	52.6	48.2		19.9	23.0		103.3	90.5	
Covington	50.4	22.5	25.8	37.6	18.5	31.1	104.1	42.0	
Crenshaw	60.0	52.2	20.9	34.0	25.6	6.0	118.0	111.8	54.1
Cullman	61.9	52.8	54.1	62.0	52.9	54.6	50.2	43.3	
Dale	44.3	32.7	21.4	32.2	21.3	22.3	91.8	70.2	18.3
Dallas	118.0	98.3	74.2	46.2	35.2	42.1	141.9	120.2	85.4
DeKalb	50.8	55.9	47.1	48.1	52.6	48.1	191.4	210.2	
Elmore	122.5	99.3	48.8	50.8	39.9	27.8	219.4	183.4	78.6
Escambia	41.0	45.4	39.7	23.8	22.1	34.0	83.4	98.2	51.8
Etowah	88.4	86.3	68.5	70.8	63.5	50.8	185.6	208.5	163.6
Fayette	47.5	31.4	32.5	37.8	31.6	25.2	104.9	30.3	75.7
Franklin	74.8	51.2	29.9	64.6	43.7	27.7	266.7	172.7	66.7
Geneva	26.1	29.1	6.6	17.1	21.3	7.6	79.6	82.1	
Greene	135.7	95.3	78.4	25.9	11.4	55.4	158.2	113.2	77.4
Hale	101.3	68.7	51.7	53.2	26.0	28.3	118.4	83.7	59.9
Henry	30.0	43.5	25.7	14.2	20.2	16.3	46.9	68.5	36.2
Houston	49.7	34.5	26.3	27.7	18.7	5.7	108.9	72.3	75.6
Jackson	91.0	73.5	50.9	87.1	66.5	34.7	136.9	162.9	25.7
Jefferson	127.8	101.2	80.5	63.2	43.5	33.3	214.8	191.8	154.3
Lamar	61.3	47.8	22.2	45.3	39.6	19.8	156.0	91.4	35.2
Lauderdale	81.6	91.0	74.2	64.8	68.0	79.7	150.6	189.5	50.6
Lawrence	100.5	101.2	82.0	75.2	73.6	72.5	172.8	179.2	108.9
Lee	95.1	80.4	29.4	58.4	46.3	5.5	122.4	109.2	51.9
Limestone	138.1	93.4	77.3	101.2	81.9	70.8	235.6	123.8	94.7
Lowndes	83.4	90.9	69.9	11.8	24.6	61.6	94.5	101.9	71.3
Macon	500.8	430.7	217.0	76.0	32.8	59.3	586.3	516.3	250.8
Madison	173.0	117.1	69.8	125.2	86.9	46.7	278.6	188.4	124.3
Marengo	93.7	75.1	35.5	40.2	15.8	9.9	114.1	97.8	45.3
Marion	51.9	46.9	25.4	50.1	47.7	26.2	116.0	22.9	
Marshall	71.2	62.9	51.4	60.9	59.4	50.8	344.2	169.1	70.9
Mobile	112.5	108.0	108.0	58.8	53.9	43.3	199.0	205.3	224.1
Monroe	54.6	54.9	49.1	25.8	25.1	27.6	79.5	81.9	68.4
Montgomery	116.3	82.3	56.6	64.8	37.7	22.0	150.6	122.1	87.3
Morgan	84.1	88.6	26.4	73.2	73.6	19.8	136.3	157.0	56.5
Perry	93.8	85.2	63.4	36.5	44.0	54.5	116.1	107.8	66.8
Pickens	111.1	103.6	92.4	44.2	30.8	7.9	186.7	182.7	171.6
Pike	56.5	61.3	43.1	28.0	25.9	11.2	89.1	104.3	81.9
Randolph	52.3	42.4	22.3	25.7	33.4	9.5	150.3	74.8	68.0
Russell	83.6	87.0	67.0	51.5	49.8	82.0	94.0	105.6	57.4
Shelby	83.1	79.6	90.0	53.7	52.3	57.8	172.7	160.2	185.0
St. Clair	71.5	66.5	68.0	55.5	47.5	54.8	136.9	144.2	121.9
Sumter	124.4	101.9	54.6	24.4	17.5	69.0	153.3	124.4	50.7
Talladega	111.9	93.5	76.6	63.1	41.5	48.0	186.0	178.8	123.5
Tallapoosa	65.9	45.4	40.9	44.7	19.5	27.5	107.2	102.0	70.4
Tuscaloosa	109.7	103.6	84.7	82.6	81.0	83.6	159.1	148.3	86.9
Walker	66.0	70.4	46.8	50.1	57.8	42.3	151.4	153.5	76.6
Washington	70.0	51.7	69.6	49.9	39.2	19.9	98.9	69.4	139.5
Wilcox	84.9	102.1	72.3	42.8	28.8		95.2	123.2	93.2
Winston	45.4	43.2	12.4	45.7	43.4	12.5			

†Estimated on the basis of deaths recorded January-October. Blank spaces indicate no reported deaths.

COMMENT

Tuberculosis caused the State of Alabama an average of 2,360 deaths each year for the five-year period, 1924-1928, and 2,180 deaths in 1929-1933. In each period approximately seven of each 100 deaths from all causes were caused by tuberculosis. The probability of dying from tuberculosis was less in the latter period than in the former, as indicated by the mean annual death rate of 81.4 and 93.0 per 100,000 population, respectively. This rate, on the basis of the first ten months of 1934, is expected to be even lower, namely 62.1.

The annual death rate among the colored population has been consistently in excess of that for the white population, usually about three times the latter. The downward trend in the rates, however, has been noticeably parallel for both groups since 1927.

In order to make possible a comparison between the estimated death rate for 1934 and the recorded mean rate for the two preceding quinquennial periods in each county by color, a table is presented. Although the majority of counties show a rate for 1934 less than that for the period 1929-1933, it is of interest to note that in approximately one out of five counties the rate is practically unchanged or even higher. No attempt should be made to compare the death rate of one county with another because they have not been made comparable by any process of standardization.

A further analysis of trends in the annual death rate (1924-1933), by counties, shows that all too frequently the trend is neither up nor down and in ten counties the rates have tended somewhat to increase between 1929 and 1933.

The Hookworm Problem—Laboratory technics for the diagnosis of hookworm have been improved so that it is now possible to determine not only the prevalence of hookworm in any area but also to estimate the worm burden or intensity of infestation of single individuals or large groups. The quantitative methods of examination which have been developed are useful in evaluating the results of sanitation and treatment programs because it is possible with these methods to have a control examination before the initial measures are instituted.—*Leathers and Keller, New Orleans M. & S. Jour., Jan. '35.*

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE
DISEASES IN ALABAMA

	Oct.	Nov.	Estimated Expectancy Nov.
Typhoid	51	30	84
Typhus	24	18	8
Malaria	984	722	230
Smallpox	0	2	17
Measles	84	244	41
Scarlet fever	114	152	212
Whooping cough	79	76	75
Diphtheria	291	226	356
Influenza	59	234	262
Mumps	6	67	22
Poliomyelitis	5	3	3
Encephalitis	3	2	2
Chickenpox	22	81	67
Tetanus	6	5	6
Tuberculosis	204	227	270
Pellagra	11	14	23
Meningitis	1	1	4
Pneumonia	95	177	186
Syphilis (private cases)	242	220	137
Chancroid (private cases)	1	1	8
Gonorrhea (private cases)	194	125	157
Ophthalmia neonatorum	1	1	2
Trachoma	2	0	0
Tularmia	0	0	0
Undulant fever	6	5	1
Dengue	543	262	0
Amebic dysentery	4	3	0
Rabies	0	0	0
Human cases	0	0	0
Positive animal heads	56	72	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

ALABAMA, OCTOBER 1934

Int. List Numbers (1929 Revision)	CAUSES	Number of Deaths			*Death rate per 100,000 Population	
		Total	White	Colored	1933	1934
	ALL CAUSES	2190	1158	1032	†9.9	†9.3
1, 2	Typhoid fever	16	9	7	5.6	6.8
3	Typhus fever	1		1	1.3	0.4
6	Smallpox					
7	Measles	6	4	2	0.9	2.5
8	Scarlet fever	1	1		0.4	0.4
9	Whooping cough	11	7	4	3.9	4.7
10	Diphtheria	31	27	4	14.6	13.2
11	Influenza	23	10	13	13.7	9.8
107-109	Pneumonia, all forms	101	55	46	52.0	42.9
16	Poliomyelitis					
22	Tetanus	2	1	1	1.7	0.8
23-32	Tuberculosis, all forms	124	45	79	70.5	52.7
23	Tuberculosis, pulmonary	116	42	74	65.7	49.3
38	Malaria	55	36	19	30.1	23.4
45-53	Cancer, all forms	116	78	38	54.6	49.3
59	Diabetes mellitus	25	19	6	8.6	10.6
62	Pellagra	25	13	12	12.5	10.6
82	Cerebral hemorrhage, apoplexy	135	67	68	46.4	57.4
90-95	Discases of heart	307	171	136	109.1	130.5
	Diarrhea and enteritis					
119	Under 2 years	29	15	14	20.2	12.3
120	2 years and over	11	7	4	8.6	4.7
130-132	Nephritis	187	96	91	75.2	79.5
140-150	Puerperal state, total	32	16	16	14.2	13.6
140-145	Puerperal septicemia	13	4	9	5.6	5.5
157	Congenital malformations					
		21	17	4	8.2	8.9
158-161	Congenital debility and other diseases of early infancy	114	64	50	53.7	48.5
162	Senility	36	18	18	17.6	15.3
163-171	Suicides	14	12	2	4.7	5.9
172-175	Homicides	62	20	42	27.9	26.3
176-198	Total accidental causes	131	87	44	55.0	55.7
	Other specified causes	343	188	155	166.7	145.8
199, 200	Ill-defined and unknown causes	231	75	156	108.3	98.2

*Annual rate based on October deaths for year stated.

†Death rate per 1,000 population.

Book Abstracts and Reviews

Definite Diagnosis in General Practice: By W. L. Kitchens, M. D., with a foreword by John H. Musser, B. S., M. D., F. A. C. P., Professor of Medicine, in the Tulane University of Louisiana School of Medicine. Large Octavo of 1,000 pages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$10.00 net.

The prospective purchaser of this book must not be misled into thinking that the presence of this book on his desk will make diagnosis so easy and so simple that he can dispense with a careful history, a complete examination and free use of the laboratory. The book is intended rather to call to his attention, after an examination more complete than is usually given, the various diagnostic possibilities. In the first portion of the book there are listed over five hundred symptoms and under each symptom are listed the diseases which may produce it. In the second portion of the book over four hundred diseases are listed and under each disease are listed the essential symptoms and findings. There is no descriptive matter whatsoever.

There are several other books on the market which have attempted to serve as an aid in differential diagnosis. The oldest and best known is French's "Differential Diagnosis." In this volume each symptom is described, its significance given, the diseases in which it is encountered listed and the differential features of each disease briefly described. In addition there are excellent illustrations which add much to the value of the book. DeQuervain has written a very similar book on "Surgical Diagnosis." Barton and Yater have written a volume on "Symptom Diagnosis" in which the various symptoms and physical findings are listed and the diseases in which they occur briefly described. All three of these volumes seem to possess a definite advantage over the one by Kitchens. The final opinion as to the value of the book can be reached only after it has been used for a reasonable length of time and the reviewer will publish in these columns at a later date a final opinion as to its practical value.

C. K. W.

A Manual of the Practice of Medicine: By A. A. Stevens, A. M., M. D., Formerly Professor of Applied Therapeutics in the University of Pennsylvania; Honorary Consulting Physician to the Philadelphia General Hospital; Consulting Physician to St. Agnes Hospital, Philadelphia. Thirteenth Edition, revised. 685 pages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$3.50 net.

If you are looking for a book to which you may refer for details in regard to a difficult or unusual case, you will want one of the larger volumes rather than an outline of medicine. If, however, you want a brief description of all diseases which you can read over once a year in order to freshen your knowledge of medicine and in order to keep in mind the diseases which you are most likely to encounter in practice, this manual of medicine will fill your need. Stevens' Manual of the Practice of Medicine is the ideal text-book for the medical student who is taking his first course in medical practice. The reviewer has often wondered why the teachers of medicine overlook the advan-

tages of these small outlines and use text-books that are so filled with details that the beginner is unable to get a vivid interpretation of each disease.

Stevens' Manual is outstanding for the vividness of its clinical and pathological descriptions and for the practical interpretation of the significance of many of the important symptoms and syndromes. The discussion of the possible courses which a disease may take is not duplicated in other texts. Only in its description of the methods of treatment does this book fall short of what one expects in a modern volume, the details of treatment being sadly missing and the prescriptions being more of the shotgun variety than the simpler and more logical type recommended by modern pharmacologists. On the whole this is a good book and the fact that it has gone through thirteen editions indicates its popularity.

C. K. W.

Institutional Care of Mental Patients in the United States: By John Maurice Grimes, M. D., four years a Staff Member of the Council on Medical Education and Hospitals of the American Medical Association. Published and distributed by the author, 1816 North Clark Street, Chicago, Illinois. Cloth. 160 pages. Price \$3.00.

This book of 160 pages, the outgrowth of a two-year study of institutions for the mentally ill, was made at the request of the Council on Medical Education and Hospitals of the American Medical Association. The data gained from questionnaires sent to 631 institutions and visits to 600 of them form the basis of the study. The author directed the work, visited personally a number of the institutions and made his report which the Council did not accept.

The impression gained from reading the book and advertising letter is that a vigorous effort has been made to suppress the material, thus attempting to make the book a startling disclosure of unwholesome conditions. As a matter of fact such information can be gained from the perusal of annual reports made and published regularly by practically all state hospitals for the insane and if necessary corroborated by visits to these institutions by any one sufficiently interested.

The implication is made that such institutions are not alive to their problems and handle their wards in such a careless and unscientific manner. So-called "proof" is offered by calling attention to the higher recovery and improvement rate in privately controlled institutions, which, as is well known, receive many more cases in their incipency; and, besides, patients of the type admitted to these private hospitals have, as a rule, a better outlook because of many factors, including background, education, economic situation and intelligent interest and cooperation of relatives. Among other misconceptions fostered is that a goodly percentage of cases of terminal dementia could be improved and released from institutions if properly treated, when even the most optimistic psychiatrist knows that there will always be a large portion of the population of every state hospital needing custodial care only and that elaborate scientific study of such individuals, except for

research purposes, would be a waste of the taxpayer's money.

This book will prove boring to psychiatrists and because of its prejudicial style may stir up some physicians and laymen who do not know the real facts.

Doctor W. D. Partlow, Superintendent of the Alabama Insane Hospitals, makes the following remarks in regard to this volume: "I read many passages in the book and the review gives about the impression I have of the book. It is an injustice to well conducted institutions for the insane in the United States. It leaves the impression that there is not the same scientific progress and work being done for the benefit of patients in public state institutions as is being done for private patients and private institution patients by the profession outside. While there may be instances in which that inference could be drawn, yet it would not be fair to indict the entire public institution group on the grounds of some isolated instances. My observation has been that the opposite is true. In other words, as a rule mental patients who have means and have been treated and cared for by the profession outside, then passed to private institutions and have not improved come to the public state institution and improve or recover in many instances."

Manual of Clinical Laboratory Methods: By Pauline S. Dimmitt, Ph. G., Medical Technologist for the Stout Clinic, Sherman, Texas. Former Instructor in Biological Chemistry, University of Texas School of Medicine; and Medical Technologist in the Pathological Laboratory, John Sealy Hospital, Galveston, Texas. F. A. Davis Company, Publishers. Philadelphia. 1934. Cloth. 156 pages with 36 illustrations. Price \$2.00.

This book, though only a manual of 150-odd pages, contains adequate descriptions of those laboratory procedures which are of practical value to the practicing physician. The descriptions are brief but leave out no detail essential to the performance of the various tests. Space is conserved by omitting any mention or description of various methods other than the method used by the author. The illustrations are, for the most part, borrowed from other texts on the same subject. While unsuited for the use of the expert pathologist, the manual is ideal for the office nurse, the laboratory technician or the physician who is interested in establishing his own laboratory.

C. K. W.

The Compleat Pediatrician, Practical, Diagnostic, Therapeutic and Preventive Pediatrics: By Wilburt C. Davison, M. A., D. Sc., M. D., Professor of Pediatrics, Duke University School of Medicine and Pediatrician, Duke Hospital. Formerly Acting Head of Department of Pediatrics, The Johns Hopkins University School of Medicine, and Acting Pediatrician in Charge, The Johns Hopkins Hospital. Fellow American Academy of Pediatrics and American College of Physicians. Member White House Conference, American Pediatric Society and American Board of Pediatrics. Seeman Printery for Duke University, Publishers, Durham, N. C. 1934. 1,957 paragraphs. Cloth. First edition.

Doctor Davison had an excellent thought when he chose this title. This book is the most unique and complete gist of pediatric work for the student, practitioner and pediatrician so far published.

The introduction gives detailed instruction for using the book. The paragraphs are numbered instead of the pages, since each carries separate and distinct points. Chapter one is devoted to signs and symptoms of disease, plus laboratory findings of each. Chapter two summarizes all the diseases encountered in the practice of pediatrics. In the summary one finds the definition, incidence, preventive measures, signs and symptoms, differential diagnosis, laboratory findings, prognosis and treatment. Chapter three includes preventive medicine and child care, such as antenatal and postnatal measures, habit training, treatment of the common childhood diseases and practical nursing care. Chapter four gives the technic of all fluid administrations. Chapter five is the weakest one in the entire book. Doctor Davison gives a very conservative set of feeding schedules which may be good, but I doubt if he uses them. I believe they are too conservative for the average child. After making a diagnosis from chapter two one can practice medicine with chapter six. Chapter seven is most scientific and gives complete laboratory methods used in the present day hospital.

R. P.

Synopsis of Genito-Urinary Diseases: By Austin I. Dodson, M. D., F. A. C. S., Professor of Genito-Urinary Diseases, Medical College of Virginia; Genito-Urinary Surgeon to the Hospital Division, Medical College of Virginia; Genito-Urinary Surgeon to Crippled Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic, Richmond, Virginia. The C. V. Mosby Company, publisher. St. Louis, Mo. 1934. Cloth. 265 pages with 111 illustrations. Price \$3.00.

This little book is intended primarily for the use of the student of medicine and as a source of quick reference for the practicing physician. Like all synopses, its chief characteristic is its brevity but, in this case, space has been conserved by leaving out details of the pathological and clinical pictures. It contains no theoretical discussions, no details of laboratory experiments, and no statistical analyses of case reports. Primarily practical, it deals with diseases of the urinary tract as seen in the office and at the bedside and it tells how to treat these diseases. It is more a guide for work than a source of food for thought.

The chapter on urologic diagnosis is especially valuable. In the discussion of diseases, the author has used a classification based on etiology rather than on the anatomic location of the disease.

C. K. W.

Hospitalization Of The Mentally Ill—Members of the House of Delegates and others have been solicited by Dr. John M. Grimes to purchase a book that he has printed purporting to contain the results of the study recently made by the Council on Medical Education and Hospitals of the hospitalization of the mentally ill in the United States. Such individual use of the Council's material is, of course, wholly unauthorized. A report prepared by Dr. Grimes when he was employed by the Association was not published because in the opinion of the Council and an advisory committee of psychiatrists and neurologists his conclusions were not supported by the evidence presented. . . .—*Jour. A. M. A.*, Nov. 10, 1934.

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

The Annual Home Coming Meeting of the Talladega County Medical Society was held in Talladega, Tuesday, December 11, 1934, at the Purefoy Hotel. The program was as follows:

"Fracture Problems," by Dr. H. Earle Conwell, Birmingham, Alabama; "Nervous Indigestion," by Dr. Fred Wilkerson, Montgomery, Alabama.

The meeting was well attended and much enthusiasm and interest manifested.

* *

Application blanks are now available for space in the Scientific Exhibit at the Atlantic City Session of the American Medical Association, June 10-14, 1935. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient. Applications close February 25, 1935.

Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

* *

At the November meeting of the Tuscaloosa County Medical Society, Dr. Chalmers H. Moore of Birmingham gave a very interesting paper entitled "The Scope of Neuro-Surgery." Dr. Moore has recently returned after spending the better part of the year in the clinic of Dr. Frazier at the University of Pennsylvania and at the Neuro-Surgery Clinic of the New York Postgraduate Hospital.

A second paper was presented by Dr. John H. Ferguson entitled "The Autonomic Control of Gastric Function," which dealt in detail with the result of two years of extensive research on the part of Dr. Ferguson. He is Assistant Professor of Physiology and Pharmacology at the Medical School of the University of Alabama and has recently come to the campus from the Medical School of Yale University.

* *

The Southeastern Surgical Congress, through its secretary, Dr. B. T. Beasley,

announces the sixth annual assembly of the Congress which will be held in Jacksonville, Florida, March 11, 12 and 13, 1935. The Congress has met previously in Atlanta, Birmingham and Nashville.

The states composing the Congress are Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and Virginia. A record attendance is anticipated at the Jacksonville meeting. Since March is the most desirable month to visit the land of flowers many surgeons will no doubt combine business and pleasure and attend during this season of the year.

Some of the most distinguished surgeons in the country representing the different surgical specialties have been invited to appear on the program. A partial list of those who have already accepted places is as follows: Doctors Walter C. Alvarez, Perry Bromberg, Hugh Cabot, Willis C. Campbell, George W. Crile, John F. Erdmann, Paul Flothow, Ralph Green, Arthur Hertzler, C. Jeff Miller, Alton Ochsner, J. C. Patterson, J. Knox Simpson, J. W. Snyder and W. A. Weldon. More than twenty others will be listed when the program is completed. Look for the completed program which will be mailed about February 15, 1935.

For information address Dr. B. T. Beasley, Secretary-Treasurer, 1019 Doctors Building, Atlanta, Georgia.

* *

Dean Stuart Graves of the University of Alabama School of Medicine was elected President of the Tuscaloosa County Medical Society for the ensuing year at the banquet meeting December 14, which especially honored Dr. James S. McLester, President-Elect of the American Medical Association.

Dean Graves succeeds Dr. Ralph McBurney, who has completed two terms as President of the Society. Other officers elected were Dr. Charles Abbott of Tuscaloosa, Vice-President, succeeding Dr. Sidney Tarwater of the Bryce Hospital staff; and Dr. Peabody Mayfield of the Bryce Hospital, Secretary-Treasurer, succeeding Dr. C. C. Belcher of Tuscaloosa.

Dr. C. C. Belcher was elected a member of the County Board of Censors for a five-year term to succeed Dr. S. T. Hardin

whose term of service expired January 1, 1935.

More than seventy members of the county group, consisting nearly the entire membership, attended the banquet. The principal speech of the evening was delivered by Dr. McLester of Birmingham, the honoree, who has been a member of the faculty of the University School of Medicine since its founding. The title of his address was "Old Age, A Philosophy for the Later Years," which was genuinely enjoyed by all who attended the banquet.

* *

Dr. Lewis Stephen Pilcher, scholar and editor for half a century of the oldest surgical journal in the United States, the *Annals of Surgery*, died December 24th at eighty-nine years of age. Country school teacher, county practitioner, naval surgeon, student of tropical disease, anatomist, professor of surgery, editor, bibliophile, patriot—these nouns indicate a few of his many interests and activities over a long and intensely useful life.

Lewis Stephen Pilcher entered the University of Michigan at the age of thirteen, and took his bachelor's degree at seventeen, the youngest matriculant and the youngest graduate of that great institution. His master's degree was added within a year; and in that same year he entered upon medical study. This was in 1863 when the Civil War was raging. The next year found him with enough medical knowledge to volunteer as a hospital steward and throw himself into the thick of service to the sick and wounded. Then back to the University of Michigan and the doctor's degree in 1866. Many years later, 1900, this same institution conferred upon him the honorary degree of Doctor of Laws. Practice began in a rural district of Michigan at the age of twenty; at the same time, to guarantee a livelihood, teaching in the little schoolhouse by the blacksmith shop. He rode his horse across the countryside to the call of the sick, followed the current literature of medicine, and for diversion read the classics in their original Greek and Latin.

The next move was to an internship in a Detroit Hospital. Then a postgraduate course in the hospitals of New York City. And then came the successful examination

and appointment as Assistant Surgeon in the United States Navy, in 1867. His marriage, retirement from the Navy, and entrance into private practice, in 1872, all spelled romance and adventure. Then came the years of practice. But Pilcher wanted something more. He organized a dissecting room in his house. This expanded into an adjacent building. A museum and library grew up in connection with it. He dissected also at the Long Island College, and became Adjunct Professor of Anatomy, in 1879, and Surgeon to the Dispensary. In 1885 he was appointed Professor of Surgery at the New York Post Graduate Medical School.

In 1884 he became editor of the *Annals of Surgery*, which position he has occupied to the present day. This publication, beginning in 1884, was acquired in 1897, by J. B. Lippincott Company. The editorial policy and censorship of advertising have never been relinquished by the Editor. If we add to the fifty years of the *Annals of Surgery*, the seven years of the *Annals of Anatomy and Surgery*, and its predecessor which he inspired and dominated, this period of medical editorship establishes him as the dean of medical editors in the United States, if not in the world.

Truth About Medicines

PROPAGANDA FOR REFORM

The German Fruit Salts Fraud.—The Bureau of Investigation reports that for the past year or two Herman Landgraf of 1233 West Huntingdon St., Philadelphia, has been selling through the mails what he has variously called "German Fruit Salts" or "Fruit Salts Biological Elektrolyt." On July 30, 1934, the Acting Postmaster General issued a fraud order debarring H. Landgraf from the use of the United States mails. If one were to believe Mr. Landgraf, his panacea was good for practically every pathologic state to which the human body might be subject. So crudely was the nostrum exploited that it would seem that Landgraf was more ignorant than fraudulent. According to Mr. Landgraf the composition of the "Fruits Salts Biological Elektrolyt" was: Sodium citrate 19.5 per cent; Sodium tartrate 20.5 per cent; Sodi-

dium phosphate 25.9 per cent; Sodium sulphate 34.1 per cent. From this it appears that 60 per cent of the so-called "Fruit Salts" consists of a mixture of Glauber's salts and sodium phosphate—substances that by no stretch of imagination can be called salts derived from fruits. In his literature Mr. Landgraf listed alphabetically only 138 conditions, but prefaced the list with the statement: "If you cannot find listed what you are looking for, please write, it is impossible to name every disease on a circular"—which seems obvious. On October 25, 1934, the Bureau of Investigation received a letter from Dr. L. E. Baker of Espy, Pa., reporting that H. Landgraf had come to that town allegedly as an agent for the "Hilton Chemical Company," Philadelphia, and that signs had been put up at small stores reading: "Diabetes. Any Disease Relieved by New System of Medicine from Europe." The storekeepers, Dr. Baker reported, were instructed to refer prospective patients—or victims!—to the Hilton Chemical Company. This would appear to be an attempt by Landgraf to circumvent the fraud order issued by the United States Post Office Department. (Jour. A. M. A., Oct. 27, 1934, p. 1325)

Misbranded "Patent Medicines".—The following "patent medicines" have been the subject of prosecution by the Food and Drug Administration of the U. S. Department of Agriculture which enforces the Federal Food and Drug Act: Dr. Gardner's Kidneyaid (G. S. Cheney Co., Inc., Boston), essentially pipsissewa leaves, althea root, sassafras bark and triticum. Ferrac (Greenville Products Co., Greenville, Ala.), essentially sulphates of iron, aluminum, lime, magnesium, sodium and potassium with water. Extorac (Greenville Products Co., Greenville, Ala.), essentially sulphates of iron, aluminum, lime, magnesium, sodium and potassium, with water. Radium Cone No. 3 (Radium Cone Co., Long Beach, Calif.), a brick containing radium, yielding 32.6 millimicrocuries of radon when left in one gallon of water eighteen hours. P. C. Ointment (Pacific Coast Proctological Clinic, Los Angeles), essentially zinc oxide and volatile oils, including menthol camphor and tar oils, in a petrolatum base. Nofal (Lifol Co., Tulsa, Okla.), es-

entially coal tar creosote, rosin soap, alcohol and water. (Jour. A. M. A., Oct. 6, 1934, p. 1084)

Mahlon Locke—Foot Twister Extraordinary.—The publicity accorded to Mahlon Locke, Canada's newest contribution to faith healing, has aroused great interest among both the medical profession and the public. The profits to be derived from the sale of shoes to persons suffering with chronic diseases affecting the bones and joints has induced many a department store to add a Locke department to its shoe section. Disciples of the Canadian healer journey about with a motion picture film demonstrating Locke himself in action at the shrine in Ontario. The doctor is shown at work, sitting in a swivel chair while human beings come toward him from eight radiating paths to put their feet trustingly in his lap. Either just before or just after he receives the feet he also receives a dollar bill, which is deposited in his pants pocket. He then bends the foot outward and downward and the patient moves on. Some sort of an associate bends the hands of the patients and there are adjacent quarters in which women assistants wiggle the arms, bend the neck hither and thither and bend the back of the patient over a table. It should be obvious to any one that Dr. Locke's treatment represents psychologic suggestion reenforced by the laying on of hands; perhaps in a few instances the pulling of an adhesion such as any masseur might attempt. The activities of Dr. Locke are a burlesque on the scientific practice of medicine. His promotion is a violation of every traditional, ethical tenet! There are some who say that even psychologic relief for the chronic arthritic patient is worth while, regardless of the means by which it is accomplished. The reaction on the scientific practice of medicine and the chagrin and disappointment of those seriously sick do not permit this laissez faire attitude. Moreover, many a person who might be benefited by scientifically applied physical therapy and by competent orthopedic surgery is spending hard-earned money to make the long trek to Williamsburg in search of a pot of gold which those at the end of the rainbow are quite consistently saving for themselves. (Jour. A. M. A., October 13, 1934, p. 1153)

Report on Sterility of Ampule Preparations.—An article by Gershenfeld in the *American Journal of Pharmacy* (105: 155, 1933) raised anew the question of the sterility of ampule preparations of medicinal products used for parenteral injection. In the discussion of this question before the Council on Pharmacy and Chemistry of the American Medical Association it became apparent that neither the Council nor the National Institute of Health was in a position to take up a bacteriologic survey of these products or to establish an extensive system of control. It was agreed that it would be advantageous for the Council and other interested organizations to have a report on the procedures and tests used by manufacturers to determine whether or not the contents of their ampule preparations are sterile. The Secretary of the Council sent a questionnaire to the manufacturers of ampule preparations whose products are listed in *New and Nonofficial Remedies*. The replies to the questionnaire were placed in the hands of a referee of the Council charged with the preparation of a report. Neither the referee nor any one else as far as he knows has any reliable information on the incidence of bacterial contamination of these products and, of more significance, the incidence of infection due directly to the injection of ampuled material contaminated with pathogenic bacteria. Without this information it is not wise to attempt to recommend special regulatory rules. It is obvious, however, that these injectable preparations should be sterile, and the advisability of the adoption of standard methods of testing for sterility is clearly indicated. In view of the fact that this question is under discussion by other bodies as directly concerned as the Council, no specific action was taken by the Council; but its information and the opinions expressed in the reports were placed at the disposal of all interested groups, in the expectation that by a joint action a uniform and effective system of testing for sterility will be instituted. (*Jour. A. M. A.*, September 1, 1934, p. 678)

Special Purpose Foods for Diets Restricted in Dextrose Formers.—The Committee on Foods of the American Medical Association reports that Special Purpose

Foods, such as special bread, cake and flour, for diets restricted in dextrose formers, to be eligible for acceptance, excepting in cases of special adaptability, shall contain dextrose formers in an amount not greater than 3.3 Gm. of dextrose per hundred cubic centimeters (computing the dextrous equivalence as the carbohydrate, plus 58 per cent of the protein, plus 10 per cent of the fat content of the food). (*Jour. A. M. A.*, September 1, 1934, p. 681)

The Sterility of Drugs in Ampules.—About a year ago Gershenfeld of Philadelphia College of Pharmacy and Science, called attention to the fact that solutions marketed in ampules, generally considered to be sterile, may occasionally be contaminated with pathogenic organisms. From a brief survey then made by Gershenfeld, it appeared that many firms fail to indicate on the labels of ampule preparations whether or not these are sterile. The physician ordinarily makes the tacit assumption, when he administers to a patient the contents of a sealed container of this type, that adequate precautions have been taken by the manufacturer to assure the absence of viable micro-organisms. While in the majority of instances this belief is no doubt warranted it appears that this is not universally the case. When an infection has occurred from a parenteral injection, it is usually impossible to determine whether this was due to the solution employed or to a slip in technic. For this reason evidence is not available either as to the approximate incidence of contamination or as to the occurrence of infections from the use of nonsterile products. The Council on Pharmacy and Chemistry recently undertook to study this problem. In its investigation it found that a number of other agencies were interested in this same subject and were taking steps to establish standard methods to be employed by commercial organizations. These were the Committee on Revision of the Pharmacopoeia of the United States, the National Formulary Committee, the American Drug Manufacturer's Association and the American Pharmaceutical Manufacturers' Association. Most of the recommendations made have been based on the regulations issued by the United States Public Health Service. It is anticipated that the prob-

lems involved will reach an early solution. (Jour. A. M. A., September 1, 1934, p. 683)

Yeast Vitamin—Harris Tablets and Brewer's Yeast—Harris, Medicinal, Not Acceptable for New and Nonofficial Remedies.—The Council on Pharmacy and Chemistry reports that Yeast Vitamin—Harris Tablets and Brewer's Yeast—Harris, Medicinal, are marketed by the Harris Laboratories, Tuckahoe, N. Y. Full-page advertisements have appeared in medical journals, containing claims such as: ". . . successfully used and prescribed in anemia, herpes infection, pellagra, ulcers, arthritis and diabetes." The claim that vitamin B may be used successfully in the treatment of diabetes is unwarranted. There is lack of evidence that yeast, vitamin B, or any other known vitamin has any effect on the faulty dextrose utilization in uncomplicated diabetes. The claim that yeast is effective in the treatment of pernicious anemia appears to be an obvious misinterpretation of known facts and published data. The only clinically proved indications at the present time for the use of vitamin B (and its related fractions) lie in the so-called deficiency diseases of beriberi, polyneuritis, and, probably, pellagra. The conscientious practitioner would do well to adhere to the established armamentarium in combating such serious conditions as diabetes and pernicious anemia. Insulin and liver and stomach preparations are proved, whereas yeast has only the claims of a manufacturer to recommend it. Neither the trade package nor the accompanying literature contains any statement of potency, nor does the Council know of any published protocols on the assay of the products as purchased on the open market. The Council declared Yeast Vitamin—Harris Tablets and Brewer's Yeast—Harris, Medicinal, not acceptable for New and Nonofficial Remedies because they are marketed with no statement of potency on the labels; with names of diseases for which they are recommended appearing on the labels, and with exaggerated, unwarranted and misleading therapeutic claims. (Jour. A. M. A., November 3, 1934, p. 1378)

Energy Claims for Foods.—The Committee on Foods reports that all foods except the simple mineral foods and water

contain chemical energy available for use by the healthy body to support the many activities and life processes and incidentally to maintain temperature. This use of the term "energy" in defining the caloric energy value of foods should not be confused with the popular usage signifying the state of extreme well being, good health, vitality, strength, vigor or endurance. Food advertising should correctly inform the public of the energy values of foods in carefully chosen terms that may be properly interpreted. The distinction between the caloric and popular senses of the word "energy" must be recognized and observed. The terms "food value" or "nutritional value" should not be used synonymously with "food-energy value." The food or nutritional value of a food includes the vitamin, mineral, protein, fat, and other values. (Jour. A. M. A., November 10, 1934, p. 1452)

Utilization of Vitamin A and Carotene.—Many factors ordinarily exert an influence on food materials or therapeutic substances in the intestinal tract, and absorption and subsequent utilization are to a great extent dependent on them. In an attempt to elucidate the reported difference between the utilization of vitamin A from butter and that from cod liver oil in the presence of liquid petrolatum, Dutcher and his associates (J. Nutrition 8: 269 (Sept.) 1934) studied the behavior of the pigment carotene under similar circumstances. Groups of experimental animals were given adjusted quantities of liquid petrolatum together with various amounts of butter fat, carotene, cod liver oil and an extremely potent concentrate of cod liver oil. The observations made by these men are generally in accord with other observations made under somewhat different conditions. There is little doubt that vitamin A can be absorbed from the intestine despite the presence of liquid petrolatum. On the contrary, it was found that the pigment carotene, which usually accounts for the vitamin A potency in plants and plant products and which in the animal body is transformed to vitamin A itself, is absorbed from a solution in liquid petrolatum to little if any extent. Both carotene and vitamin A occur in butter and the relative quantities vary. Liquid petrolatum will

therefore vary in its effect on different samples of butter. These studies emphasize the unique contrast in external behavior between two structurally related compounds which, once they are inside the body, behave identically. In practice, as has been pointed out, the usual manner of taking liquid petrolatum, i. e., apart from a meal, virtually eliminates the danger of loss of vitamin A or its precursor (carotene) by the mechanism here discussed. (Jour. A. M. A., November 17, 1934, p. 1540)

Special Purpose Foods:—The Committee on Foods reports that the labels and advertising of foods with usefulness restricted to specific purposes shall prominently display, in easily legible type, the designation "Special Purpose Food," a statement listing all ingredients in the order of decreasing predominance by weight, and the special purpose of the product. In addition, as much of the following information should be given as is significant to permit the intelligent use of the particular product by the consumer: specific properties, vitamin and mineral content, the calories per gram or ounce, and the grams of each carbohydrate, protein and fat per portion. (Jour. A. M. A., September 8, 1934, p. 755)

Toxicity of Chlorpicrine Gas.—Chlorpicrine, manufactured by the Innis Speiden Company, New York, is trichloronitromethane or nitrochloroform, having the formula CCl_3NO_2 . This substance has been much used as a war gas of the lachrimatory variety. Exposure promptly leads to severe frontal headache. The toxicity of chloroform (trichlormethane) is well known in relation to anesthesia. As an industrial agent trichlormethane is rated as possessing a toxicity at least double that of carbon tetrachloride, which is regarded as a highly dangerous industrial substance. The introduction of the "nitro" radical into the chemical structure is believed definitely to enhance the toxicity. This general group of chemicals may be credited with the capacity of producing renal lesions and damage to the respiratory and gastrointestinal tracts and the liver. (Jour. A. M. A., September 8, 1934, p. 774)

Kelpe'koe.—The Bureau of Investigation reports that "Kelpe'koe" is a later name

given to a product known earlier as "Pacific Health Ore." In the latter part of 1931 it was reported that a Mr. Ben Sweetland, president of the Sweetland Advertising, Inc., of New York City, had become interested in the financial possibilities of selling this brand of crushed rock as a "patent medicine." As a result of this interest, Kelp'koe, Inc., was brought into existence. As part of the advertising "come-on" there was reproduced what purported to be an analysis of the product, made by the Bowser-Morner Testing Laboratories of Dayton, Ohio. It is noted from this analysis that the essential substances in Kelpe'koe are aluminum sulphate and ferrous sulphate (green vitriol). The other ingredients may be disregarded because of their minute amounts. As originally exploited, the product was put out as a frank cure-all, and it was claimed that "sensational results have been obtained with Pacific Health Ore in the following conditions: Diabetes, Kidney and Liver Disorders, Gas and Ulcers of the Stomach, Hemorrhoids, Colitis, Eczema and Skin Trouble, Rheumatism, Goiter, Tonsillitis, Infections, Female Disorders, Etc." After the change of name the therapeutic claims became more specific. And the price was nearly doubled. As Pacific Health Ore it was sold for \$2.50 a pound; as Kelpe'koe it was sold for \$4.85 a pound. One of the specific claims for Kelpe'koe was that it was a "rejuvenator"—and was "the most effective natural tonic and body builder for men and women ever discovered in the history of medical research." A year after the first stock-selling letter was sent out with the laboratory report, the Kelpe'koe concern added cobalt to the list of alleged ingredients of its nostrum. Apparently it was decided that cobalt would make good advertising material when the Kelpe'koe concern had unearthed an old and obscure newspaper clipping that fitted in with the plan to exploit the nostrum as a cure for diabetes. It appears that a French physician, Bertrand, claimed in 1926 that the potency of insulin for the elimination of dextrose in the blood would be increased when the reaction takes place in the presence of infinitesimal amounts of nickel and cobalt. The facts are that, although eight years have elapsed since Bertrand first

made his report, his theory has found no general acceptance by scientific medicine. The perniciousness, not to say wickedness, of exploiting this crude ore as a rational treatment for diabetes, and the implied claim that by using it, it will be possible to abandon the use of insulin is, of course, not as obvious to the diabetic as it is to every physician. Kelpe'koe, Inc., in fact, specifically states that the product is 'not offered to you as a medicine, specific or "cure,"—and then goes on to publish testimonials alleged to be from diabetics who claim to have been cured! As has already been stated, on the admission of the exploiters themselves, the person who takes Kelpe'koe is getting, for all practical purposes, merely a solution of alum and iron sulphate. (Jour. A. M. A., November 2, 1934, p. 1639)

Hydrochloric Acid in Hay Fever.—Beckman (J. Allergy 1: 496 (Sept.) 1930) reported 67 per cent of complete or marked relief in 237 hay fever cases by the oral administration of nitrohydrochloric acid; this figure was about equal to that obtained by leading allergists with the usual desensitization methods of injections of specific pollen extracts. Many other workers have argued this point both before and after Beckman's article, and the consensus, especially among leading allergists, is about as follows: 1. No one has proved that hay fever or other allergic disease is due to a lack of acid (i. e., an alkalosis). 2. Although the method has been tried by many allergists, in general it has not been successful in alleviating the symptoms of hay fever. The intravenous injection of dilute hydrochloric acid recently advocated in allergic conditions is not without danger; its usefulness in these disorders is quite questionable. (Jour. A. M. A., September 22, 1934, p. 938)

ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following apparatus has been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

Foregger Infant Resuscitation Outfit.—The apparatus consists of a machine which permits the administration alternately of two standard mixtures of oxygen and car-

bon dioxide; viz., 30:70 and 5:95. There is an accurate metric gage which permits the control of the amount of gas used. The inhalation mask makes the operation of tracheal insufflation more simple. The safety valve eliminates the danger of too great gas pressure in carrying out the foregoing procedure. It is to be understood that tanks containing any percentage of carbon dioxide and oxygen can be attached to this apparatus. One can attach a tank containing the desired percentage of carbon dioxide and oxygen and another containing pure oxygen should the user so desire. Foregger Co., Inc., New York City. (Jour. A. M. A., September 1, 1934, p. 677)

Burdick Electrosurgical Unit.—An electrosurgical diathermy unit, Model No. SU-2, which makes use of two currents—one from a spark gap high frequency generator and the other from a tube oscillating unit. The two currents may be blended or used separately. The Burdick Corporation, Milton, Wis.

Jones Motor-Basal Apparatus.—The estimation of metabolism is derived from the time required for the subject to consume exactly one liter of oxygen. The consumption of oxygen is recorded on a plate moved at a uniform rate by clock work. The calculation is made by means of an adapted slide rule. Technical errors may be detected by a protractor. The Middlewest Instrument Company, Chicago.

Fischerquartz "Cold" Ultraviolet Lamps.—There are five models: No. 95. Combination Fischerquartz Lamp (for both orificial and general body treatments); No. 87 Super Fischerquartz Lamp (the same as No. 95 without the orificial burner); No. 59. Floor Model Fischerquartz Lamp; No. 76 Portable Lamp (for orificial treatments); No. 67. Wall Model Fischerquartz Lamp (substantially the same as Portable Model No. 76). Except for size, length of tube or shape, the burners for these lamps are essentially the same. The Fischer Corporation, Glendale, Calif. (Jour. A. M. A., November 24, 1934, p. 1620)

Stretch-A-Way Reducer and Health Exerciser Not Acceptable.—The Council on Physical Therapy reports that the Stretch-A-Way Reducer and Health Exerciser,

manufactured by the Stretch-A-Way Company, Chicago, may be described as a pair of leather stirrups supported on a wooden cross-bar, and a handle jointed by a heavy cord of liver rubber, which furnishes the tension for the exercises. A strap is provided to fasten the device into the floor or under a door. The firm asserts that the outfit is used for reducing excess flesh and bases the claims on the improvement in blood circulation and the toning and strengthening of sagging muscles. Reducing hips and thighs, and improvements of posture are further claims. The concern, however, has submitted no evidence to substantiate the various claims made for this apparatus. The advertising states that the apparatus is "Endorsed by medical authorities," but the firm failed to give the names of the medical authorities who have endorsed it. In view of the unwarranted claims appearing in the advertising matter, the Council did not include the Stretch-A-Way Reducer and Health Exerciser in its list of accepted devices for physical therapy. (Jour. A. M. A., November 24, 1934, p. 1621)

The Sterilometer and The Aseptic-Thermo Indicator.—The A. M. A. Chemical Laboratory reports that Sterilometers, manufactured by the Sterilometer Laboratories, Los Angeles, and Aseptic-Thermo Indicators, manufactured by the Aseptic-Thermo Indicator Co., also of Los Angeles, are products designed for determining effective sterilization of certain types of materials. The products are designed for inclusion in or near the center of packages of goods for pressure-steam sterilization to determine whether or not adequate sterilizing conditions have been met throughout the depth of the material. The two devices were called to the attention of the A. M. A. Chemical Laboratory by Dr. T. B. Magath of the Mayo Clinic, who had conducted a study of the Aseptic-Thermo Indicator. Dr. Magath concluded: "These Indicators are satisfactory for testing sterilization with steam under pressure for all uses in bacteriologic laboratories and hospitals." Under the auspices of the A. M. A. Chemical Laboratory, a further investigation of the products was undertaken. This was performed in the laboratory of, and in collaboration with, the depart-

ment of bacteriology of a well known medical school. This investigation indicated that either type of indicator is efficient in determining sterilization by the autoclave. The Sterilometer appears to be equally efficient in determining sterilization by dry heat but it has the disadvantage, as compared with the Indicator, that it is rendered irregular in its action by artificial methods of aging and is subject to complete color change in the open Bunsen flame and partial color change in boiling water. Apparently, neither product could cause a false feeling of security since, whenever the reaction or change was irregular, matching did not occur. The error in every instance was on the side of safety and failure of matching. Whenever color change had proceeded to the point of matching, sterilizing conditions had been met sufficiently to result in the destruction of all micro-organisms, including spore-formers. The A. M. A. Chemical Laboratory concludes that, if further studies are equally confirmatory, the Sterilometer and Aseptic-Thermo Indicator may be found of distinct value in hospitals and bacteriologic and pathologic laboratories. (Jour. A. M. A., November 24, 1934, p. 1621)

Vestvold's Orificial Magno-Vibrator Not Acceptable.—The Council on Physical Therapy reports that R. F. Vestvold, Haverford, Pa., manufacturer of Vestvold's Orificial Magno-Vibrator, claims that this unit "gives instant relief in asthma, stimulates nerve function, and induces sleep"; that the "Magno-Vibrator breaks up construction of rectal tissue and spastic sphincter muscles; an excellent adjunct in the relief of constipation when due to this cause"; that "mineral elements of the body, particularly the iron, become charged with magnetic force which is distributed by the blood stream uniformly throughout the entire system. Iron acts as a catalyzer, uniting the oxygen to the cell (oxidation)." An investigation of this unit revealed nothing so far as its therapeutic efficacy was concerned. Furthermore, the claims for the device, recorded in the advertising matter, were unwarranted, misleading and exaggerated. The Council omitted the Vestvold's Orificial Magno-Vibrator from the list of accepted devices. (Jour. A. M. A., September 29, 1934, p. 992)

Miscellany

ADVERTISERS' NOTES

PABLUM—MEAD'S PRE-COOKED CEREAL

Mead Johnson & Co. are now marketing Mead's Cereal in dried pre-cooked form, ready to serve, under the name of Pablum. This product combines all of the outstanding mineral and vitamin advantages of Mead's Cereal with great ease of preparation.

All the mother has to do to prepare Pablum is to measure the prescribed amount directly into the baby's cereal bowl and add previously boiled milk, water, or milk-and-water, stirring with a fork. It may be served hot or cold and for older children and adults cream, salt and sugar may be added as desired.

Mothers will cooperate with physicians better in the feeding of their babies because Pablum is so easy to prepare. It gives them the extra hour's rest in the morning and saves bending their backs over a hot kitchen stove in summer. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

* * *

UNITED STATES' MILK CONSUMPTION SHOULD BE
INCREASED 70%, BORDEN SCIENTIST
TELLS A. P. H. A. MEETING

Milk production and consumption in the United States ought to be increased by about 70 per cent, Dr. James A. Tobey, director of health service of The Borden Company, New York City, told members of the American Public Health Association who assembled in Pasadena, Cal., from September 2 to 6 for that organization's 63rd annual meeting.

Dr. Tobey's address on "Nutrition and Health and the Price of Milk" was delivered before the Association's food and nutrition section. Dr. Tobey, a well-known writer on health subjects, is author of "Milk, The Indispensable Food", co-author of "The Most Nearly Perfect Food" and member of the American Public Health Association's committee on milk and dairy products.

"Despite the fact that modern science has demonstrated in a long series of brilliant investigations that pure milk is indispensable to adequate human nutrition, and

that the dietary qualities of dairy products surpass those of practically all other foods, the average American consumes too little milk," Dr. Tobey asserted. "In 1933, for example, the annual per capita consumption of fluid milk and cream in this country was only 38.8 gallons, or 0.85 of a pint, a day.

"Scientists who have worked out the mass food requirements of the American people on a careful nutritional basis declare that even in a restricted diet for emergency use, 155 quarts, or 38.75 gallons, of milk are necessary for each person in the course of a year. Today our people are, therefore, barely living on a restricted and meagre milk diet.

"For an adequate diet at minimum cost, not less than 260 quarts, or 65 gallons of milk or its equivalent in other dairy products is advised. For an adequate diet at moderate cost, or for a liberal diet, the per capita figure is set at 305 quarts, or 76.25 gallons of milk annually."

* * *

COCOMALT

Clinical tests prove conclusively that pregnancy is a drain upon the woman's calcium reserve. Very often this is manifested by softening of the bony structure . . . including the teeth. It is a well-known fact that pregnant women very often have decaying teeth, and even lose their teeth during pregnancy.

Such women need their calcium intake increased—and their ability to mobilize calcium augmented. For the drain upon calcium is so great at times as to actually abstract calcium from their bones and teeth.

Cocomalt because of its admixture of milk supplies an abundant amount of calcium and at the same time a sufficient amount of Vitamin D to help mobilize the calcium. Cocomalt is licensed by the Wisconsin University Alumni Research Foundation under Steenbock Patent No. 1,680,818. One glass or cup of Cocomalt, prepared as directed, contains not less than 30 Steenbock (81 U. S. P. revised) units of Vitamin D. It is accepted by the Committee on Foods of the American Medical Association.

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THE INDICATIONS FOR AND THE TECHNIQUE OF THORACOPLASTY*

By

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and

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In discussing a symposium on the treatment of tuberculosis at the meeting of the American Association for Thoracic Surgeons in 1932, Dr. Edward Archibald¹ of Montreal stated, "What strikes me most in today's address is the apparent enormous increase of the general confidence in the value of minor operations, chiefly phrenic exaeresis, and the relative retrogression of the idea of thoracoplasty. I am not at all sure that the swing of the pendulum is altogether a good thing. Indeed, I suspect that within the lapse of a few years, it will be found that phrenic exaeresis, and various other minor operations, which are now being used extensively as an independent, and often the sole operation, will end up by giving imperfect results, and often disastrous results. The frequently imperfect effect of phrenic exaeresis in the long run is to be set against the immediate mortality of thoracoplasty in the short run; and I think that the comparison, in respect of apparently permanent arrest and restoration of work capacity, will be found to be greatly in favor of thoracoplasty, whereas the operative mortality of thoracoplasty is now brought down to a very low figure in properly selected cases."

*From the Departments of Surgery and Medicine, Vanderbilt University.

*Read at a meeting of the Northeastern Division of the Association, Huntsville, Sept. 17, 1934.

1. Archibald, Edward W.: Discussion on symposium of tuberculosis, *J. Thoracic Surg.* 2: 21, 1932.

Further in this report, Dr. Archibald stated, "A phrenicectomy, performed as an independent collapse operation, frequently improves symptoms to such an extent that the patient, and also the patient's doctor, remains satisfied with a partial result and refuses the proper and thorough collapse operation of thoracoplasty. But the disease is only partially held, and, after a variable delay, there appears an extension of the disease in the good lung, which now makes thoracoplasty impossible."

There are many who disagree with Dr. Archibald, but even in so short a time the direction of the swing of the pendulum is changing. If one is to treat pulmonary tuberculosis intelligently, he should be familiar with all available procedures such as rest in bed, pneumothorax therapy (including intra-pleural pneumolysis), phrenicectomy, thoracoplasty, extra-pleural pneumolysis, scalienotomy and intercostal neurectomy. But in the final analysis, it would seem that rest in bed, pneumothorax therapy and thoracoplasty are the most valuable assets.

If the two layers of pleura remained free of adhesions in all instances of pulmonary tuberculosis, there would be, with rare exceptions, few indications for surgical collapse therapy. Pneumothorax therapy could be carried out in most of the patients who did not respond favorably to rest in bed. The only frequently encountered exception to this statement is the patient who has so much destruction of the lung tissue that re-expansion would be impossible even if total collapse could be obtained by the introduction of air.

The accepted indications for thoracoplasty are changing rapidly from time to time with improvements in surgical judgment and technique. There are too many factors that demand individualization in the selec-

tion of patients for thoracoplasty to make it practical to present a list of dogmatic indications that can be followed with safety. In general, however, patients are chosen for operation who have moderately or far advanced chronic tuberculosis, in the treatment of which pneumothorax therapy cannot be carried out successfully and rest in bed has been ineffective. The lesion should be of the fibrous type rather than the caseous one. Deviation of the trachea towards the diseased side and changes in the contour of the ribs indicate the fibrous type of tuberculosis. Although it is not essential that the opposite lung be entirely free of disease, evidence that it is not progressing should be obtained by observing it for a long period of time before an extensive thoracoplasty is carried out. If the disease is limited to the apices and is fibrous in type, partial thoracoplasties may be carried out on each side. Selective collapse therapy by rib resection is being used much more generally at present than it was previously. Thoracoplasty is indicated in instances of severe persistent empyema, whether due to the tubercle bacillus alone or to a mixed infection. It is indicated in many patients in whom the pneumothorax therapy or phrenicectomy or both are not producing a sufficient compression of the diseased area. In this connection, it is well to remember the statement of Claus, which is as follows: "A good pneumothorax is better than a thoracoplasty, but a good thoracoplasty is better than a bad pneumothorax." In brief, thoracoplasty is indicated when more conservative methods of treatment have failed, or are almost certain to fail. This means that the operation should not be performed in the early stages of the disease. On the other hand, it should be carried out before the tuberculosis has progressed beyond reasonable hope of cure and while the patient is in relatively good physical condition.

The contraindications to operation, with the exception of definite activity in the opposite lung, are thought to be fewer today than was formerly the case. Advanced heart disease is a contraindication. Tuberculosis of the larynx or intestinal tract in a patient in moderately good condition does not forbid the performance of a thoracoplasty.

During the past five years there have appeared in American medical journals reports by various men of large numbers of patients with pulmonary tuberculosis in whom operation has been performed. This is in striking contrast to the period between 1918 and 1925, when Alexander² found that only about 300 such operations were reported. The results that have been obtained by most surgeons have been extremely gratifying. When it is realized that a person with a large pulmonary cavity has only a small chance of living for five years without some form of collapse therapy and that he has an excellent chance of complete cure with it, the enthusiasm for these procedures seems justified. However, it is extremely important that this enthusiasm be curbed to the extent that nothing is done which will cause such valuable therapeutic aids to fall into disrepute.

As regards the technique of thoracoplasty, sufficient time has not yet elapsed since these procedures were first performed to allow for general standardization. In fact, a rigidly standardized procedure will never be possible as one has to vary the operation according to the position and the extent of the disease. Every one is agreed that the initial removal of ribs should be carried out through a posterior incision and that the operation should be performed extrapleurally. Gourdet in 1895 showed that a greater collapse occurred following the removal of given lengths of ribs if the resections were performed paravertebrally and the angles were included. There are some who advocate the removal of short lengths of five or more ribs at one operation, and others who believe that long lengths of not more than three ribs should be removed at one time. Some individuals prefer to operate on the upper ribs first and others choose the lower ones. It seems to me that the majority of surgeons are agreed at present that the best procedure consists of the multiple-stage operations in which long lengths are removed beginning with the upper ones. Most of the deaths which have occurred shortly after operation have been due to the removal of too many ribs at one stage. Most of the failures to close cavities

2. Claus, Friedrich—Quoted by Alexander: *Surgery of Pulmonary Tuberculosis*. Philadelphia and New York. Lea & Febiger. 1925, p. 97.

have been due to the fact that the segments of ribs which were removed were not sufficiently long. Hedblom has made a great contribution to the surgery of pulmonary tuberculosis in demonstrating the advantages of many-staged operations.

The non-closure of large, thick-walled cavities in the upper third of the lung is the most frequent cause of failure to effect a complete cure by thoracoplasty. If these cavities are to be completely closed, it is usually necessary that all of the ribs overlying them should be removed in toto, and it is frequently necessary to remove the transverse processes and costal cartilages as well. The methods that are employed by Alexander³ and by O'Brien⁴ in this respect are of interest. The former uses a J-shaped incision beginning about 5 cm. below and behind the anterior border of the trapezius and ending close to the inferior angle of the scapula. After the trapezius and rhomboid muscles have been divided, the vertebral border of the scapula is lifted away from the chest wall and the serratus magnus muscle which lies under the scapula is exposed. This muscle may be divided or its attachment may be freed along with the periosteum. The scapula is then lifted posteriorly and laterally and an excellent exposure of the underlying ribs is obtained. Alexander then resects the greater portion of several of the upper ribs, including the transverse processes. He states, "It would not be difficult to remove still greater lengths of the first and upper ribs because their anterior ends and cartilages lie in the sagittal plane of the paravertebral wound and are therefore approximately as accessible as the most lateral portions of the same ribs. If greater lengths than those specifically cited need to be removed, I believe that it is safer to postpone this phase of the operation to another stage and then operate by the antero-lateral thoracoplasty technique that will presently be described." If it is necessary to remove the anterior stumps of the ribs, Alexander suggests that this be done as a second or third stage before completing the removal of the

lower posterior segments; otherwise, less collapse will be effected after regeneration of bone has occurred.

The technique which is used by O'Brien is slightly different from that employed by Alexander. The advantage which is claimed for it is that antero-lateral operations will be unnecessary. The incision differs from that previously described in that it is carried around the base of the scapula to the axillary line instead of stopping at the inferior angle of the scapula. The attachments of the serratus major muscle are freed and an excellent exposure of the upper ribs is obtained. O'Brien removes the entire length of the upper three ribs at the first operation. If the cavity is quite large, he removes the transverse processes, the cartilage of the first rib, and the cartilages of the second and third ribs are either removed or divided at the sternal margin. The number of subsequent operations is dependent on the extent of the disease, but he never removes more than three ribs at any one operation. He does not advise in most instances the removal of the anterior ends of the ribs below the third one.

We have used in our own work each of these procedures which have been described. It does not seem to be a question of which is the better one for all cases, but rather of choosing the correct one for the given case. It is exceedingly important to obtain a good exposure of the ribs that are to be removed. The circulatory system of the patient is harmed less by a long incision than it is by an added amount of traction on the scapula. It is a good working rule to remove a greater length of rib than is thought to be necessary for the closure of a cavity. The more frequent error is the obtaining of too little collapse rather than too great collapse.

The anesthetic which is used at the Vanderbilt University Hospital for these operations consists of local infiltration plus nitrous oxide and oxygen during the time that the ribs are being removed. Various anesthetics are used in different clinics. A few surgeons prefer to perform the entire operation using only local anesthesia. Ether is used rather extensively in Germany. In some instances, the material which we use for ligatures and sutures is silk and in

3. Alexander, John: Special considerations relating to surgical closure of large upper lobe tuberculous cavities, *J. Thoracic Surg.* 2: 1, 1932.

4. O'Brien, E. J.: The present status of thoracoplasty, *J. Thoracic Surg.* 3: 159, 1933.

others plain catgut is employed. The incisions are not drained. Although it is usually not necessary, a transfusion of blood is given immediately following every major thoracoplasty. The patient is placed on his diseased side when returned to bed. The interval separating the various stages usually varies from ten days to three weeks. If it is believed that this interval will have to be longer than three weeks, regeneration of bone should be prevented by applying Zenker's solution or formalin to the periosteum.

It is our belief that the upper age limit at which this operation supposedly can be done with moderate safety is too low. We have had three patients in the late fifties who have had this operation and all of them are in much improved health at the present time. The largest cavity in our series was in a physician, 58 years of age, who is now back in active practice. He has a very small residual cavity but is afebrile and has gained 28 pounds in weight.

In a recent article by Wiener and Fishberg⁵ it was stated that a complete closure of cavities had not been produced following thoracoplasty in any of their patients. In view of the excellent results that have been obtained by many other men, it is difficult to explain their failures. Lipiodol has been introduced in several of our patients following thoracoplasties and no cavities are visible on x-ray examination.

During the past four years, thoracoplasties have been performed on forty-five patients in the Vanderbilt Hospital, the number of stages being more than one hundred. Only one patient died in the hospital following the operations. This makes a mortality rate of less than one per cent per operation, and slightly more than two per cent per patient.

Radium In Surgery—It is the interstitial use of radium which is peculiarly the duty and obligation of the surgeon. The surgeon must interest himself in any form of therapy which requires penetration of tissue for its application, and the application of such a powerful agent as radium should be peculiarly his domain.—*Fischel, Texas State J. Med., Jan. '35.*

5. Wiener, J. J. and Fishberg, Maurice: Ultimate results of thoracoplastic operations in pulmonary tuberculosis, *Arch. Int. Med.* 52: 341, 1933.

CARDIAC DISEASE IN GENERAL PRACTICE*

By
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Birmingham, Ala.

My remarks are directed largely to the general practitioner. I have nothing new or sensational to offer but aim to simplify the diagnosis and management of cardiac disease, which ranks first as a cause of death, is incurable, often produces years of partial disability, and is common to all classes. For these reasons the burden of treating the majority of patients with cardiac disease falls on the family doctor.

During the course of this discussion I would have you consider the heart as a mere muscular pump with four chambers whose openings are guarded by valves. Disease may attack the muscle, the valves, the nerve or blood supply or the enclosing sac, the pericardium.

The existence of cardiac disease can usually be recognized from the history alone. Heart failure produces cardinal symptoms which are familiar to all of you. If we know the age and sex of the patient and remember the incidence of the various types of cardiac disease, we can make a fair guess as to the etiology before examining the heart itself.

ETIOLOGY OF CARDIAC DISEASE

Etiology	Age	Predominant Sex	Incidence (Willius)
Arteriosclerotic Heart Disease	60 Plus	Male	25%
Myocardial Infarction			11%
Hypertensive	50-60	Male	12%
Leutic (19 Yrs. After Initial Infection)	40-50	Male	8%
Rheumatic	30-40	Female	28%
Subacute Bacterial Endocarditis			9%
Pericarditis			5%
Congenital			1%
Functional Disturbance			
Extrasystoles			
Paroxysmal Tachycardia			
Heart Block			
Cardiac Neurosis			
Goiter			

I shall limit my discussion to the four large groups of cardiac disease, namely, arteriosclerotic, hypertensive, luetic and

*Read before Jefferson County Medical Society, Birmingham, May 21, 1934.

rheumatic, as time will not permit a discussion of the entire subject.

ARTERIOSCLEROTIC HEART DISEASE

Arteriosclerotic heart disease is the most common and offers more diagnostic pitfalls, because the heart itself often appears perfectly normal on physical examination. The most frequent early symptom is dyspnea on exertion, anginal pain being complained of by about one-third of patients with arteriosclerotic heart disease. The patient is usually over sixty years of age with signs of generalized arteriosclerosis, though the absence of peripheral arteriosclerosis does not exclude the existence of sclerosis of the coronary vessels. In uncomplicated cases the heart will be normal in size or only slightly enlarged and if studied when compensated, the rate, rhythm, and heart sounds may be normal. The most common positive findings are distant heart sounds and increased rate. In many instances changes in rhythm such as splitsounds, gallop rhythm, auricular fibrillation and heart block are present. Pathological murmurs are usually absent. Occasionally arteriosclerosis of the aortic valve will cause aortic stenosis and regurgitation with its cardinal signs. In such cases a diagnosis of luetic heart disease is not infrequently made.

Anginal pain will be considered here as coronary arteriosclerosis ranks first among its causes. It is more common in the male of fifty years or over and in professional classes, particularly physicians. Anginal pain is typically substernal, radiating into the left chest, neck and left arm, varying in severity from a slight substernal uneasiness to an agonizing sense of constriction as if the heart had been seized in a vise. The diagnostic feature is not the severity nor the location of the pain but the fact that it is brought on by exertion, excitement, exposure to cold, or by eating a heavy meal and relieved by rest. I have now under my care four patients who were referred to me with a diagnosis of gallbladder disease producing right upper abdominal pain. The referring physicians would not accept the diagnosis of arteriosclerotic heart disease with anginal pain until roentgenologic studies of the gallbladder and gastro-intestinal tract had been made and

normal findings reported. In each instance the character of the pain was typically anginal, that is, always brought on by exertion and always relieved by a few minutes rest. Two of the patients were having slight edema of the feet and ankles in the afternoon. Periodic attacks of anginal pain may come on spontaneously, particularly in nervous women, but are of less serious prognostic significance than when brought on by physical exertion or emotional upsets. Anginal pain from lues occurs in younger people and will be discussed later. Regarding severe angina Osler makes the following statement: "The two special features in this group are the existence in a large proportion of all the cases of organic disease of the heart or vessels and the liability to sudden death."

When arteriosclerosis gradually occludes the coronary vessels, myocardial degeneration and fibrosis result from a deficient blood supply, and myocardial failure finally causes death. The likelihood of an acute coronary occlusion always makes the immediate outlook uncertain. Acute coronary occlusion may result from embolism, thrombosis, arteriosclerosis, pedunculated vegetations on the aortic leaflets and syphilitic aortitis, but the majority are due to a thrombus forming in a portion of the artery narrowed by arteriosclerosis. The results of a coronary occlusion will vary with the suddenness of the closure, the size and location of the vessel occluded, and the presence or absence of collateral circulation. The pain from acute coronary occlusion is usually severe but tends to have the same variable characteristics as to severity and location as do the recurring attacks of anginal pain from chronic coronary disease. The diagnostic features are suddenness of onset, shock, profound weakness, smothering, pallor, cyanosis, lowered blood pressure, followed by nausea. After a few hours if the patient survives there may be a slight elevation of temperature and moderate leukocytosis. In a large percentage of cases death is almost instantaneous. Sometimes death occurs a few days after the onset of the attack. Frequently, this is due to an embolus arising from a thrombus formed on an area of endocardium injured by infarction. A few patients survive the first occlusion to be perman-

ently disabled until they die with a second one. Rarely there is a complete symptomatic recovery.

HYPERTENSIVE HEART DISEASE

Hypertension is primarily a disease of the arterioles and produces changes in every organ of the body. Death may result from cardiac failure (60-70%), rupture or occlusion of a cerebral blood vessel (20%), or renal failure (10%). It is more common in the male and is second to arteriosclerosis as a producer of cardiac disease. The majority of patients with hypertension have known that they had it for several years before cardiac symptoms developed and have been aware that such symptoms were likely to develop. The most common age for its development is between fifty and sixty years. The blood pressure will be elevated except in a few instances when the patient is examined during a state of cardiac decompensation and the blood pressure has dropped because of cardiac failure. The peripheral blood vessels will be prominent, thickened and often sclerosed. The heart will be enlarged to the left with accentuation of its sounds, particularly the first sound at the apex. The most constant functional change is an increase in rate. Frequently there will be changes in rhythm, such as fibrillation, extrasystoles, and gallop rhythm. (Gallop rhythm should always be regarded as a serious prognostic sign, though many patients live for years after it is first noted.) Systolic murmurs are not infrequently heard over the entire precordium but particularly over the apex of the heart. The amount of edema will vary with degree of decompensation.

LUETIC HEART DISEASE

The fundamental pathologic lesion of syphilis is an endarteritis and perivascular round cell infiltration. Any part of the cardiovascular system may be attacked but from a cardiac standpoint we are principally interested in the arch of the aorta, or more specifically the root of the aorta including the aortic valves and the openings of the coronary vessels. The predominating lesion may be one of three possibilities, namely, aneurysm of the aorta without involvement of the valve or coronary orifices, dilatation of the aorta and of the aortic

ring resulting in aortic valvular insufficiency, or partial or complete occlusion of the coronary vessels.

Fifteen or twenty years are usually required after the initial lesion for luetic heart disease to become sufficiently advanced to produce cardiac failure and consequently the usual age that luetic heart disease is first seen by the cardiologists is between forty and fifty years. Occasionally, luetic heart disease advances so rapidly that death occurs within a few months after the initial infection.

Aneurysm of the aorta without involvement of the valves or coronary vessels does not properly belong in a discussion of heart disease and shall not be considered.

Simple aortitis, a term given to the early lesion of the first portion of the aorta before valvular insufficiency develops, is quite difficult to diagnose. The most common symptoms are paroxysmal dyspnea which is not typical, and substernal pain. The diagnosis is made on other evidence of syphilis and roentgenographic evidences of widening of the aortic shadow.

If the disease has advanced to valvular insufficiency, the diagnosis is usually not so difficult. Aortic insufficiency may be caused by arteriosclerosis in older people and rheumatic heart disease in younger people but when found in a middle aged person it should be considered luetic until proven otherwise. Symptoms of myocardial failure are often the first to develop. Occasionally chest pain and paroxysmal dyspnea are complained of, but not so frequently as in arterioclerotic heart disease.

Narrowing or occlusion of the coronary vessel from lues produces practically the same symptoms and has the same bad prognosis as that produced by arteriosclerosis, which has already been discussed. Chest pain from dissecting aneurism affecting the surrounding soft tissues and bony structures is usually more distressing and tends to be more nocturnal than that from coronary involvement.

RHEUMATIC HEART DISEASE

It is now generally accepted that rheumatic heart disease is a disease of the entire heart and most authorities agree that the heart failure which later develops is largely due to the myocardial lesion and that the valve lesions should be regarded

as nothing more than helpful signs to indicate the nature of the damage. That rheumatic myocarditis may exist without valve lesions is a disputed question but if it does it is so rare that any patient with cardiac failure and no demonstrable valve lesion should usually be considered as having some other type of heart disease than rheumatic. Rheumatic heart disease may be caused by rheumatic fever, acute chorea, acute tonsillitis, and occasionally scarlet fever and measles. Many patients with chronic rheumatic heart disease give a history of none of these diseases.

Acute rheumatic heart disease is variable in intensity, clinical course and physical signs. Often it is so mild as to pass unnoticed while on the other hand the acute fulminating type may lead to death within a few days. If slight elevation of temperature, slight leukocytosis and increased pulse rate persist after the arthritic manifestations of an acute rheumatic infection have completely subsided, cardiac involvement should be suspected. Important physical signs which may present themselves are transient pericardial friction rub and the development of murmurs in a heart which was previously free from them. The appearance of a diastolic murmur which persists and which was previously absent is conclusive evidence. After a period of a few weeks or months the murmurs and other signs of cardiac damage may completely disappear to return a few years later. During acute infectious diseases with arthritic manifestations the electrocardiogram may be of a distinct aid in excluding or establishing the diagnosis of cardiac involvement. It is perhaps at this stage that the electrocardiogram finds its greatest field of usefulness rather than late in the disease when the diagnosis and ultimate outcome are obvious.

Chronic rheumatic heart disease is more common in the female and the usual age for failure to develop is between thirty and forty years, the symptoms of which in the main are those of heart failure from other causes. Patients with their first attack of acute congestive heart failure, rheumatic in origin, usually make a more rapid recovery and live longer than those with their first attack of congestive failure from oth-

er causes. They also stand major surgical operations better.

SIGNS OF VALVE LESIONS AND THEIR EVALUATION

Mitral Insufficiency: There are two signs which are usually attributed to this lesion, one a blowing systolic murmur over the apex, transmitted towards the axilla, and an accentuation of the pulmonic second sound. That mitral insufficiency usually produces these signs is not to be questioned. However, the murmur can be completely reproduced by a perfectly normal heart and the intensity of the pulmonic second sound varies widely in different normal individuals.

Mitral Stenosis: The characteristic murmur of this lesion is low pitched and rumbling in quality, best heard at or just within the apex. It often can more easily be heard if the patient be allowed to exercise, to sit up and lean forward, to turn slightly to the left side, or to hold the breath in exhalation. When the stenosis is slight the murmur is not widely spread and is confined to the middle or last third of diastole. This results from auricular systole, which comes just before the first sound, increasing the velocity of the blood flowing through the narrowed valve. By reason of its production the murmur may disappear during auricular fibrillation. Usually when the heart becomes sufficiently damaged to cause auricular fibrillation the stenosis is more marked and the murmur can be heard throughout diastole and over a wide area, at times as high as the third intercostal space. Accentuation of the first sound at the apex, described as slapping or banging, is seldom absent if a mitral diastolic murmur is present. This can sometimes be detected before the murmur becomes audible. Its importance is a warning to search more diligently for the murmur. A diastolic thrill at the apex is as pathognomonic of mitral stenosis as the murmur but it is often absent when the murmur is present and it is difficult to make sure that it is diastolic in time. The value of accentuation of the pulmonic second sound has already been discussed under the heading of mitral insufficiency. Cardiac enlargement may be absent for some time after other signs of mitral stenosis have been apparent. Even when a

moderate degree of enlargement exists it can be detected for certainty only by means of the x-ray. This leaves us then with but one sure sign of mitral stenosis, namely, the characteristic apical murmur; and since the signs of mitral insufficiency cannot be relied upon, this murmur becomes the one sure sign of mitral valve disease. Unfortunately there is one murmur, the Austin Flint murmur, sometimes accompanying aortic regurgitation, which very closely simulates that of mitral stenosis.

Aortic Insufficiency: As with mitral stenosis, the diagnosis of this lesion is dependent upon the recognition of a characteristic diastolic murmur, which is best heard beneath or slightly to the left of the sternum at the level of the second and third intercostal spaces. It is low pitched and blowing in quality and occurs as a direct continuation of the aortic second sound. Alteration in the heart sounds plays no importance in the recognition of aortic insufficiency. Profound changes in peripheral circulation occur when the reflux is marked, namely, water-hammer, or Corrigan pulse, increased pulse pressure (that is, elevation of the systolic and lowering of the diastolic blood pressure), and "pistol shot sounds" over the larger peripheral arteries. While these signs are invariably present in marked aortic regurgitation, a recognition of them is not necessary for a diagnosis if the characteristic murmur is present, and a diagnosis should not be made on these signs alone.

Aortic Stenosis: The signs of this lesion are usually easily detected, namely, (1) A loud harsh vibratory systolic murmur heard to the right of the upper end of the sternum and transmitted into the carotid and subclavian vessels; (2) A coarse vibratory systolic thrill over the aortic area best demonstrated by having the patient lean forward and hold the breath in expiration, and (3) Disappearance of the aortic second sound. This sound in a normal heart is produced by the closure of the valve leaflets and naturally disappears when the valves are held rigidly by scar tissue. It should also be remembered that if the valves are stenosed their edges cannot come together. For this reason a diagnosis of aortic stenosis in the absence of clear

signs of aortic insufficiency should not be made with confidence. Tricuspid and pulmonary valve lesions shall not be discussed because they are relatively uncommon and extremely difficult to diagnose.

To review briefly the fundamental signs on which a diagnosis of the four principal types of cardiac disease is based:

Arteriosclerotic Heart Disease: (1) A history of dyspnea on exertion, of anginal pain, and edema of the feet and ankles in a person of the arteriosclerotic age. (2) Signs of peripheral arteriosclerosis and sclerosis of the retinal vessels. (3) On physical examination the heart may appear perfectly normal or may show functional changes due to myocardial degeneration. Occasionally aortic stenosis and regurgitation result from sclerosis of the aortic valve leaflets.

Hypertensive Heart Disease: The two signs on which this diagnosis is based are the presence of or history of hypertension and cardiac enlargement. (Arteriosclerosis practically always follows hypertension but that hypertension follows arteriosclerosis is not true in the majority of the instances.)

Lutetic Heart Disease: When the presence of aortic regurgitation is established in a person between forty and fifty years of age it should be considered lutetic in origin until proven otherwise. X-ray evidence of widening of the aortic arch and other evidences of lutetic infection aid in establishing the diagnosis. (Stokes found that only 57% of a series of 200 cases of cardiovascular lues gave a strongly positive Wassermann reaction at the first test.)

Chronic Rheumatic Heart Disease: The establishment of the presence of mitral stenosis associated with or unassociated with aortic regurgitation should be taken as *prima facie* evidence of rheumatic heart disease. If aortic regurgitation alone exists, the age and sex of the patient, the negative or positive history of acute rheumatic infections, and the absence or presence of other evidences of syphilis must all be considered when making the diagnosis.

TREATMENT OF CARDIAC DISEASE

The first aim in the treatment of any disease should be to prevent it. Extensive literature has been written regarding the

etiology of arteriosclerosis and of hypertension. This literature may be summarized in a few words: "Nothing is known about it." The same may be said regarding the prevention of these two diseases.

The prevention of syphilis of course would prevent syphilitic heart disease. Second to prevention in importance is intensive and early antiluetic treatment before signs of cardiac involvement develop. After the heart lesion has advanced to cardiac decompensation the treatment should be for cardiac decompensation and not for syphilis.

Nothing is offered to reduce the incidence of rheumatic infections except hygienic measures which tend to promote general good health. Complete rest should be insisted upon during and following acute rheumatic infections, particularly if there is cardiac involvement, until all signs of activity have subsided. To continue rest longer than this is probably unwise. Whether the administration of large doses of salicylates during the acute stage of rheumatic fever reduces the incidence of cardiac involvement is not a settled question; most authorities now believe that it does not. However, I believe that I am safe in stating that the majority of these authorities are still using it, hoping that it might do some good, and because it makes the patient more comfortable. The possibility of salicyl intoxication should be kept in mind and guarded against. Typhoid vaccine administered intravenously has appeared to strikingly shorten the course in a few cases of acute chorea and acute rheumatic fever. This form of therapy deserves further investigation.

During the quiescent stage of chronic rheumatic heart disease certain general measures may greatly delay the final break, the most important of which is the proper regulation of exercise. In general it is safe to state that all exercise which produces undue fatigue or shortness of breath should be avoided. This naturally will vary in each case. All reasonable efforts should be made to prevent recurring upper respiratory infections and when these do develop rest should be insisted upon until recovery is complete. The tonsils should be removed when, and only when, they are diseased sufficiently to in any way impair the general good health.

Treatment of Congestive Heart Failure:

The first principle in the treatment of congestive heart failure is rest, and second to rest in importance is administration of morphine in sufficient doses to secure rest. After the acute and distressing symptoms have subsided, milder sedatives may be used. Digitalis probably rates third place in the treatment of congestive heart failure. It produces more striking results when auricular fibrillation is present. The important thing when selecting the form of digitalis to be used is to make sure that it is a potent preparation. The powdered leaf has one advantage over the tincture in that it is more stable. The simplest method of administering digitalis is orally and the maximum effect is secured almost as quickly as when administered intramuscularly or intravenously. If the patient is nauseated or too ill to take digitalis by mouth, I have usually resorted to the intramuscular route. It is quite readily absorbed from the bowel and may be given in a retention enema. Digitalis should be given for clinical results and not to produce digitalis poisoning. It has been my experience that patients of the same weight differ greatly in their tolerance for the drug. Unquestionably many of the so-called cardiac psychoses which used to be seen fairly frequently are due to digitalis intoxication. When digitalis is urgently needed there is no excuse for not giving a large dose immediately but many patients will get along just as well with medium sized doses given three times daily and it can be discontinued as soon as the desired clinical results are obtained or as soon as signs of intoxication begin to present themselves. For those patients who need to continue taking digitalis, I prefer to give it intermittently. The dose required to secure the maximum clinical improvement without producing toxic symptoms can be determined in each individual only by trial. I prefer not to compound digitalis with other drugs so that the patient can more easily learn his proper dosage. The use of Salyrgn or Novarsural given intravenously or intramuscularly, combined with the oral administration of ammonium nitrate or ammonium chloride, will usually greatly shorten the period of acute discomfort and greatly hasten maximum recovery through

their diuretic action. These drugs are usually contraindicated if there is marked kidney damage as indicated by nitrogen retention in the blood, delayed thalein excretion or hematuria. The usual dosage of ammonium nitrate is 30 grains given in $7\frac{1}{2}$ grain enteric coated tablets three times daily and of Salyrgn 2 cc. given intravenously every three or four days. A restriction of salt, restriction of fluids, and a restriction of the total caloric intake when the patient is overweight are the only factors of importance in the diet. Calcium, urea and various xanthin derivatives exert considerable diuretic action but are less powerful than the combined action of the mercurials and ammonium salts. Concentrated glucose solution given intravenously is sometimes beneficial in chronic passive congestion where the kidney damage is so marked as to render other diuretics unsafe.

Glucose solution given intravenously is also useful in combating shock from acute coronary occlusion.

Many patients with recurring attacks of angina get complete or partial temporary relief from one of the xanthin derivatives combined with a mild sedative.

BIBLIOGRAPHY

1. Stokes: Modern Syphilology, Philadelphia, W. B. Saunders Co.
2. Scott, R. W.: Modern concepts in the management of certain types of cardiovascular disease, Post-Graduate Med. Ass'n. of N. A. 55-59, 1932.
3. Willius, F. A.: Mode of death in various types of heart disease, Am. J. M. Sc. 171: 480-485, April '26.

Bronchial Asthma—(1) Bronchial asthma is a frequent condition, hereditary, and readily diagnosed.

(2) It occurs at all ages but usually begins in childhood.

(3) Skin tests are important but should be completely and carefully done, and must be correlated clinically.

(4) The best results come from specific elimination and specific desensitization where elimination cannot be carried out.

(5) Non-specific measures are important, but usually yield temporary results only.

(6) Preventive treatment in childhood is of great value in warding off bronchial asthma.

(7) The prognosis in those cases which are promptly and correctly cared for is good. The younger the patient the better the prognosis.—*Un-ger, South. M. J. Jan. '35.*

INFECTIONS FOLLOWING THE EXTRACTION OF TEETH*

By
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When one considers the close relationship of the dental and medical professions, it is apparent that medicine and dentistry belong to one science, that each has been enormously helpful to the other and that close cooperation in the future will increase our mutual usefulness.

Perhaps if this close cooperation had obtained in the past it is quite possible that the importance of focal infections existing in the mouth would not have been overlooked so long. Surely patients fifty years ago called the attention of dentists to the disappearance or mitigation of rheumatic pains after extractions that were done solely because the tooth was diseased; and likewise physicians must have been informed by their patients that certain obstinate conditions for which they had been treated had incidentally disappeared as the result of dental extractions. A closer liaison of the two professions in those days, with an interchange of clinical experience, might have resulted in an earlier appreciation of the extraordinary role that oral sepsis plays in the production of disease.

At the present time experts in nutrition and biochemistry are collaborating with dentists in an effort to find the true cause and prevention of dental caries and properly evaluate the relative importance of dietetic, biochemical and hygienic factors.

In the practical clinical medicine of today we find the physician examining the mouth at the beginning of his examination and referring a considerable percentage of his cases to the dentist. It seems to me that your experts on pyorrhea and orthodontia have much to teach the medical profession and the appearance of members of your profession at our meeting should be encouraged by our program committees.

Dentistry in its mechanical aspect demands a craftsmanship that is not demanded of surgeons. The spirit of meticulous attention to details that you must neces-

*Read at a meeting of the Alabama Dental Association, in annual session, Montgomery, April 23-25, 1934.

sarily use in the preparation of dentures would improve our technique in operative surgery. I do not hesitate to say that you do your mechanical work better than we do ours.

Your president has asked me to speak on some subject of a practical nature with which every dentist is concerned in his daily work. I can think of nothing more appropriate than postoperative dental infections, because in their incipency they are treated by you and when disquieting sequelae occur they often become a problem of the general surgeon in communities where there are no specially trained oral surgeons. I have great respect for infections following the extraction of teeth, for in my own limited experience I have seen fatal cavernous sinus thrombosis develop in three cases.

In the perusal of books on general surgery, even the special articles devoted to the surgery of the mouth or books on osteomyelitis, it is amazing to find so little information on the subject of postoperative dental infection and osteomyelitis of the mandible and maxilla, yet I suspect that most of these cases when in their terminal pathology are treated by the general surgeon. It is only through a study of the work of oral surgeons that one can gain information on the subject and even here we do not find clarity. There is of necessity confusion regarding conditions that are treated by dentists in their incipency and at a latter stage by surgeons more or less ignorant of the initial manifestations and progress of such conditions.

In my brief discussion of the subject I shall claim no special knowledge. On the contrary, my remarks are to be construed as the reaction of the surgeon to the pathology involved, and in the phases solely dental, as an inquiry of the correctness of his conclusions.

When one considers the enormous number of teeth extracted with no complications, it is obvious that dentists must use splendid judgment and that the mandible and maxillary bones are extraordinarily resistant to low grade infections. This resistance is accounted for by excellent blood supply, particularly in the maxilla, and increased local immunity developed as a result of the nearness of these bones to the

normal infectious flora of the mouth. Such local immunity is present in the rectum and vagina and without it surgery of these parts would be more hazardous and less successful than it is.

A dental extraction may be defined as a forcible avulsion of a tooth from a bone in which it is embedded. The part of the tooth known as the root is separated from the cancellous bony tissue by a thin layer of periosteum known as the peridental membrane. In the act of extraction there is of necessity trauma to the peridental membrane and the alveolus. But in most cases the blood clot that starts the reparative process seals the traumatized bone and no real infections result in spite of the pyogenic organisms present in the mouth.

The difficult extraction or the incomplete extraction certainly predisposes to infection and it would appear that in those cases where the dentist is reasonably sure such difficulty will be encountered he should resort to the so-called surgical removal which, though far from being atraumatic, has the virtue of being an open trauma with maximum drainage.

One can group ordinary extractions in one of three classes:

1. Extraction of a tooth, the root of which is sterile and which is without the protection of an old, chronic inflammatory barrier.

2. Extraction of a tooth the root of which is the site of a chronic abscess. In this type one should find the root of such a tooth fairly loose and the protective barrier well established, which, if not disturbed by the injudicious use of a sharp curette, should seldom result in fulminating infection.

3. In the acute tooth nature has not had time to completely erect its defensive mechanism.

In the first type of extraction precise and complete removal should result in a minimum of infection.

In the second group the energetic use of a sharp curette that disturbs the protective barrier would seem to be contraindicated. The sharp curette has been a dangerous instrument in the hands of surgeons and gynecologists, and I suspect that it has on certain occasions been used injudiciously by dental surgeons. In surgery of any kind,

if one could be sure that sharp curettement would result in the complete removal of infected tissue, its employment would be indicated, but when it results in incomplete removal and traumatic insult to nature's defensive mechanism it is strongly contraindicated.

Fortunately extractions are rarely done for the so-called acute tooth. Apparently most of these cases subside, sometimes only after soft tissue suppuration and drainage. Extraction of the acute tooth seems justifiable only when it is evident that its root is the site of a destructive osteomyelitis. I rather suspect that in judging the acuteness of such inflammation many mistakes have been made which resulted in serious infections.

It is probable that the hypodermic needle of the dentist plays little or no part in the production of postoperative dental infections; but in the mind of the laity serious infection is usually attributed to lack of asepsis and much unjust criticism is directed at the unfortunate dental operator who has had a fatality following an extraction.

As a class dental surgeons are wisely conservative in the minor infections and have been able to view without alarm the low grade localized osteomyelitis known as the dry socket and show great composure when minor sequestration takes place. Of course such nonchalance is but an expression of their faith and knowledge of the reparative power of the jaw bone.

However, there comes a time when the dentist is faced with a rapidly spreading and destructive osteomyelitis or an osteomyelitis associated with severe lymphangitis and cellulitis of the soft tissues of the jaw and face, his patient presenting all the constitutional symptoms of a grave infection.

It is with this type that general surgeons are concerned but its management is our mutual problem. There is no reason why the dental surgeon should not do all the operative work on the bone except for the fact that the bone pathology is only a part of the condition and he is naturally reluctant to take the responsibility of treating the soft tissue involved.

Treatment of acute osteomyelitis of the jaw has resulted in two schools of thought,

a majority of surgeons favoring conservatism and a minority inclining toward early operative attack. As in most moot questions in surgery, there is virtue in both methods, but personally I would favor the least possible bone surgery. However, I think that all loose teeth should be removed at once and adequate soft tissue incisions made at once, particularly on the outer side of the alveolus. No particular harm can come from decompressing the inflamed bone by extracting teeth whose roots are involved in extensive bone necrosis; and likewise excision of the soft, edematous tissue that may block drainage may be indicated.

After this simple, harmless surgery is done there is no occasion for operative attack until sequestration is complete and the infection has become either subacute or chronic.

Treatment of the cellulitis, lymphadenitis and edema of the face is also conservative. Mild x-ray treatment repeated in five days is beneficial. Irradiation is definitely analgesic and it also hastens the localization of pus which, of course, is a matter of considerable importance. After radiation the constant application of moist heat by means of large compresses of saturated solution of magnesium sulphate is indicated.

Some men have advocated the alternate use of hot and cold applications, the rationale of such treatment being based on the theory that such contrasting baths act as exercisers of the capillaries and prevent stagnation of blood.

The soft parts should be watched very carefully for localization of pus and when found the pus should be drained at once. At times through and through drainage is necessary and occasionally drainage tubes connecting the mouth with a facial opening are used. These cases call for the very best care of the surgeon for the possibility of cavernous sinus thrombosis and fatal septicemia is constantly before one. Thrombosis of this sinus occurs because the facial, angular and ophthalmic veins have no valves; the veins cannot collapse and there is an unusual anastomosis between the sinus and the facial veins.

Thrombosis of the sinus is usually followed by meningitis and a fatal sepsis. It

is manifested clinically by proptosis of one or both eyes and the early development of septic meningitis. It is unnecessary to go into the treatment of this dreaded complication. Perhaps it is sufficient to say that the treatments advocated so far are unlikely to prove successful.

In conclusion I wish to say that I purposely avoided the treatment of minor infections and the diagnostic uses of the x-ray which are so familiar to all of you and have tried to confine my remarks to the basic pathology and the surgical treatment which logically follows.

RATTLESNAKE VENOM*

PROPERTIES, DETOXIFICATION, AND
TREATMENT FOLLOWING BITE
BY RATTLESNAKE

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Serpents have been considered a curse to mankind for thousands of years, and their bites have been feared for many centuries. Aristotle, who lived from 388 to 322 B. C., wrote concerning the bite of the asp. Moorman quotes the following statement, which was made by Aristotle concerning snake bite, in his article, *Our Debt to Aristotle*: "The so-called septic drug is made from the body of the animal, and is the only remedy known for the bite of the original."

About three centuries after Aristotle's death, history records that Egypt's queen, Cleopatra (69-30 B. C.), who was known for her beauty and fascination, killed herself by the bite of an asp. This particular incident makes one feel certain that the human race was aware that some snakes were poisonous.

We shall omit references to other articles on serpents which were written during the next few centuries and take them up again with our own colonists. In 1824, James W. Wallace, of Fauquier, Virginia, wrote a letter concerning rattlesnake venom to Dr. John R. Cox, who was Professor of Materia Medica in the University of Pennsylvania. The following lines were taken from

this letter which was incorporated in the American Dispensary in 1827: "I made myself, et alia, subjects of experiments with the poison of the rattlesnake. My moral view of man forbade me pushing these experiments on others, whose safety is my professional study, so far as I extend them on myself. This animal substance is the true Samson of the Materia Medica, and I anticipate the time when rattlesnakes will be reared for medicinal purposes, as the poppy and the palma-Christai are now. Old scholastic dogmas fly before modern science as chaff before the wind. The effects of this poison are wonderful, as ethereal delights of long continuance, say for days, . . . ; it reddens the blood and makes the faded cheeks to glow with the rose of youthful health; it is a great corrector of the morbid resins of the bile; it drives away typhus and replaces the mind on her native throne, to admire the beauties of creation and inspire the soul with physico-theology."

Doctor Wallace had the following to say about his method of preparation of the toxin for administration: "N. B. I mixed by friction in a glass mortar and pestle, the bags, venom and all taken from two teeth of a large and venomous rattlesnake, with some cheese, and then divided the mass into one hundred pills, of which I took occasionally, sometimes one, and at other times two, three or four pills a day; a general dropsy succeeded the first state of heavenly sensation, . . . The diseases of the lymphatics and arterial system are never benefited by the rattlesnake poison, but the nerves and muscular systems are speedily roused into action; palsy is much benefited and old rheumatisms are removed or relieved; the passions of the mind are wonderfully excited Melancholy is quickly changed into gay anticipation . . ."

In 1860, Samuel Mordecai wrote a book on colonial life, and a few lines from this work, which is of quite recent date, when we compare it with the other cited references, should be quoted: "The wagons came laden with flour, butter, hemp, wax, tallow, flaxseed, lead, feathers, deer and bear skins, furs, ginseng, etc.; and I once saw a bunch of dried rattlesnakes, which I was told were useful to make viper broth for consumptive patients."

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It was also in 1860 that S. Weir Mitchell, lecturer on physiology in the Philadelphia Medical Association, wrote a treatise, "Researches upon the Venom of the Rattlesnake." This is one of the first systematic and thorough studies of the physical and chemical characteristics of the toxin.

Physical and Chemical Characteristics:

(1) Amount of venom per snake: This depends upon the size of the snake and the period since the last bite.

(2) Color of venom: The color varied from a pale emerald green to orange and straw color. If the poison was kept in the gland for a long time, the color was darker.

(3) Viscosity of venom: The venom was always more or less glutinous.

(4) Taste of venom: Whether fluid or dried, the poison was devoid of taste.

(5) Specific gravity of venom: The venom is heavier than water.

(6) Reaction of venom: It was uniformly acid.

(7) Precipitation or coagulation of venom: Mineral acids, alcohol, mercuric chloride, chlorine water, sodium sulphate, and magnesium sulphate each threw down a precipitate from the venom. Boiling produced a dense precipitate in an aqueous solution, but did not completely destroy the toxicity.

From the above tests and others which he performed, Doctor Mitchell concluded that rattlesnake venom contained the following substances:

(1) An albuminoid body. *Crotaline*, not coagulable by a temperature of 212° F.

(2) An albuminoid compound coagulable by a temperature of 212° F.

(3) A coloring matter, and an undetermined substance, both soluble in alcohol.

(4) A trace of fatty matter.

(5) Salts: Chlorides and phosphates.

There is a sphincter at the opening of the poison duct of the gland which allows the venom to collect. The anatomical position of the duct in reference to the bony structure aids also in retaining the venom.

There may be many reasons why rattlesnake bites are not always fatal for human

beings, but the following are the more probable ones:

(1) There is no tissue connecting the venom duct and the basal opening in the fang. The fang must be erected to make contact with the opening from the poison duct. If the prey is too close, the fangs may be driven back and the venom is violently ejected between the mucous cloak of the fang and the opening of the poison duct.

(2) The snake may have bitten some other animal just previously, and thus does not have sufficient venom left in the glands to kill.

(3) Both fangs may not be forced through the skin.

(4) Only one fang may be active. One fang may have been removed by violence at a previous biting.

(5) Sometimes the individual frees himself before much venom is forced into the wounded area, and in such cases most of the poison is forced out near the surface of the wound.

Rattlesnake venom is a true toxin. That is, it will arouse the production of antibodies in the blood stream of animals which have been injected with it. The lethal or fatal dose of the venom is that amount of the toxin which is required to kill the animal and depends upon several factors: (1) Method of administration; (2) Species; (3) Age; and (4) Weight. The venom from the same snake may vary in toxicity from time to time, depending upon the length of the period that it has remained in the gland. In the case of the rabbit, the lethal dose may vary from a few milligrams to as many as twenty-five per kilo body weight if the toxin is administered subcutaneously. If we compare the toxicity of rattlesnake venom with the toxicity of tetanus toxin or ricin, the poisonous protein of the castor bean, we find that it is of a different order. The weight of either tetanus toxin or ricin which would be equal to the weight of a lethal dose of rattlesnake venom would be lethal for as many as 100 to 500 animals of the same weight.

There has been considerable difference of opinion as to whether rattlesnake venom is toxic for rattlesnakes. Mitchell's own results are conflicting. He found that

a snake which bit himself did not die, but that other snakes did die if some of their skin was removed and venom was placed on the muscles, or if it was injected into this area. He reported deaths within 36 hours to 14 days. Welker and Marshall, who injected fresh venom, did not find it toxic for rattlesnakes. They injected the venom into the muscles of the back of the snake from which they obtained the venom, and also into a different rattlesnake.

Rattlesnake venom contains several toxic principles or components, and death may be caused by one or more of these:

(1) Coagulation of blood. The principle which produces an intravascular thrombosis or clot.

(2) Endotheliotoxin or hemorrhagin: A specific toxin which acts on the endothelium of capillaries and small veins, producing hemorrhage.

(3) Neurotoxin: The principle which attacks the nervous system.

(4) Hemolysin: The principle which attacks the red blood corpuscles causing hemolysis. Complementary substances such as lecithins are necessary.

(5) Agglutinin: The principle which causes the agglutination of red blood corpuscles.

In prolonged cases of poisoning by rattlesnake venom, Mitchell thought that death might be caused by the incipient putrefactive fermentation within the tissues.

There have been many antidotes or remedies used for rattlesnake bite. If you will review the probable reasons which were enumerated as to why rattlesnake bites are not always fatal, you will readily see why the first four of the following remedies might have been considered as helpful or responsible for cures:

(1) Burn the powder from a shotgun shell on the wound.

(2) Place a paste of alum and egg white on the wound.

(3) Place the warm viscera of a chicken over the wound.

(4) Soak the wound in kerosene.

(5) Inject solutions of potassium permanganate or rub the crystals into the wound.

(6) Place a ligature above the affected part to check the circulation of the blood.

(7) The venom has been removed from the wound by mechanical suction. Gross cuts about $\frac{1}{4}$ inch long and $\frac{1}{4}$ inch deep were made through each fang mark. A ligature was applied to check the circulation, and suction applied for at least half an hour. If swelling occurred, further incisions were made and suction applied to them. It was found advantageous to supplement the suction by giving some antivenin to neutralize any toxin that had been absorbed.

(8) The fact that rattlesnake venom arouses the production of antibodies has been known for some time, and the antivenin obtained has been in use for treating rattlesnake bite for more than a quarter of a century. The antivenins are prepared by immunizing some animal, such as the horse, to the rattlesnake venom. The blood serum of such an animal contains the antibodies which destroy the toxic properties of the venom. It just so happens that it has been almost impossible to obtain an immunity of such an order that the blood serum, in small quantities, would contain sufficient antibodies to neutralize the venom that might be injected by an average sized rattler at one bite. For example, Flexner and Noguchi found that it was possible to extract as much as 300 milligrams of venom from an average size snake. A ten cubic centimeter ampule of antivenin will neutralize or detoxify about 15 milligrams of rattlesnake venom, and thus it would require about twenty such quantities of the antivenin to destroy the toxicity of the venom from an average size snake. This does not mean that antivenin is not helpful in the treatment of snake bite, because an ampule or two might contain sufficient antitoxin to destroy enough of the venom so that the remainder would not be lethal.

The detoxification of rattlesnake venom has commanded the attention of several investigators. Mitchell reported in 1860 that boiling an aqueous solution of the venom at 212°F. would destroy the toxicity so that it would not kill reed-birds if injected into their breasts. Mitchell and Reichert, 1886, reported that potassium hydroxide,

ammonium hydroxide, nitric acid and potassium permanganate each had a detoxifying action on the venom. In 1927, Carmichael found that an aqueous solution of sodium ricinoleate would also destroy the toxicity of the venom. Amounts of the venom equivalent to as many as five lethal doses could be detoxified by sodium ricinoleate and injected subcutaneously into a rabbit without causing death.

The effects of the venom upon the number of red blood corpuscles was studied by the author, *et al.* Rabbits were injected subcutaneously with lethal doses of rattlesnake venom which had been dissolved in isotonic salt solution. Samples of blood were taken from the ear vein at regular intervals, and the number of red cells determined in each case. The red cells increased in number within two to three hours after the injection, and then there was a gradual decrease. The increase ran as high as 20 per cent in some of the animals. This increase in red corpuscles of the rabbit following injections of venom was confirmed by another series of experiments in this laboratory. Bakst, 1932, injected the venom subcutaneously as before, but instead of counting the cells, measured their volume at different times after the injection. An hematocrit, as modified by Van Allen, gave the volume of corpuscles in the whole blood. Within an hour after the venom had been injected, we found that the volume of the red blood corpuscles had increased as much as 18.2 per cent. These results are in fairly good accord with those obtained by the former method.

In case of the white corpuscles after the subcutaneous injections of rattlesnake venom, it was found that they gradually decreased in number and that they were often reduced to about 33 per cent of the normal (Carmichael, *et al.*).

Since the number of white corpuscles and both the number and volume of the red corpuscles were altered following the injection of the venom, it was decided to investigate the effect on the blood plasma. The venom was administered subcutaneously, and samples of blood were taken at various intervals. Bakst, 1932, noted that there was about a 20-25 per cent decrease in the total solids of rabbit blood plasma

within 12 hours after the injection of the venom.

BIBLIOGRAPHY

1. Bakst, Leon H.: The effect of injection of rattlesnake venom on the total solids in blood plasma, Thesis, 1932, University of Alabama.
2. Carmichael, E. B.: Detoxification of and the immunity production to ricin by sodium ricinoleate, *Proc. Soc. Exp. Biol. and Med.* 24: 5-7, 1926.
3. Carmichael, E. B.: The effect on the toxicity of tetanus toxin of withholding water from the diet, *J. M. A. Alabama* 1: 195-200 (Nov.) 1931.
4. Carmichael, E. B.: Detoxification of rattlesnake venom by sodium ricinoleate. *Pharmacol. & Exp. Therap.* 31: 445-454, 1927.
5. Carmichael, E. B., *et al.*: Unpublished data.
6. Flexner, S. and Noguchi, H.: Snake venom in relation to haemolysis, bacteriolysis, and toxicity, *J. Exp. Med.* 6: 277-301, 1902.
7. Mitchell, S. Weir: Researches upon the venom of the rattlesnake, *Smithsonian Contributions to Knowledge*, 12 (July) 1860.
8. Mitchell, S. Weir, and Edward T. Reichert.: Researches upon the venom of poisonous serpents, *Smithsonian Contributions to Knowledge*, 26, 1886.
9. Moorman, L. J.: Our debt to Aristotle, *Ann. Int. Med.* 2: 1216-1222, 1929.
10. Mordecai, Samuel: Virginia, especially Richmond, in by-gone days: with a glance at the present; being reminiscences and last words of An Old Citizen, 1860, pp. 65-66.
11. Noguchi, H.: Snake Venoms, Monograph, Carnegie Institution of Washington, 1909, p. 71.
12. Ozmer, R. R.: False security. *Field and Stream*, Nov. 1930, p. 32.
13. Van Allen, C. M.: An hematocrit method, *J. A. M. A.* 84: 202-203, 1925; *Lab. and Clin. Med.* 10: 1027-1040, 1925.
14. Wallace, J. W.: Rattlesnake poison (Letter written in 1824 to Doctor John R. Cox). *Amer. Dispensatory* 1827, pp. 663-664.
15. Welker, W. H. and Marshall, J.: The toxicity of rattlesnake serum and bile with a note on the effect of bile on the toxicity of venom. *Pharmacol. & Exper. Therap.* 6: 563-568, 1914-1915.

Climate In Treatment Of Tuberculosis—For many years and even today many of the profession believe that certain climates have a beneficial effect on this disease notwithstanding the known fact that climate has no influence on the course of the disease and is today classed by those who have studied tuberculosis as merely a luxury. In other words, if you live in a mean climate and change to a good one your treatment is easier to take. No one should be advised to change climates unless they have ample funds to finance themselves in real sanatorium care.—*Boswell, New Orleans M. & S. J., Jan. '35.*

A FREQUENTLY NEGLECTED PROCEDURE IN PHYSICAL EXAMINATIONS

R. M. POOL, M. D.
Fairfield, Alabama

We have been impressed in recent years by the number of patients who come to us with overlooked pathology in the anus, rectum, and colon; even in cases that have otherwise been carefully and correctly examined physically. There can be no question that there has been a marked increase in knowledge concerning diseased conditions of these parts, but for some reason there still seems to be a hesitancy on the part of the internist toward complete examinations, which possibly in many instances is due to a lack of knowledge of the ease with which such examination may be conducted. As a consequence, many patients fall into the hands of ill-informed practitioners, and the odor of quackery still pervades the proctologic field.

In no part of the human body is recognition of lesions of more importance than in the rectum, and no other patients react better to early diagnosis and treatment.

In taking a routine history much information should be secured besides that relating to constipation. Certain pointed questions should be asked regarding rectal pain, bleeding, protrusion, and changes in bowel habit. There can be no doubt as to the value of a digital rectal examination, but many of the lesions amenable to treatment and cure are not within reach of the finger. It is our opinion that a complete proctologic examination should be done on even the mildest of suspected cases, and the findings correctly interpreted.

Such an examination is made far more satisfactory by proper preparation of the patient, which should include a mild preliminary laxative, as well as several enemas. In addition, the patient should be instructed as to limited food intake during the 24 hours previous to examination. On the presumption that routine laboratory reports have already included a stool examination, our technique is as follows: The patient is placed on a Haynes table, or some modification thereof, and properly draped. The perianal area is carefully inspected and palpated. The proctoscope should not

be passed until after the digital examination has been made. Local pathology sometimes makes passage of the scope very painful, or even impossible. Some patients fear the procedure, but after a gentle, painless digital examination, their cooperation is obtained and the proctoscope or sigmoidoscope can be inserted with ease. This allows careful inspection of the lumen of the anal canal, rectum and sigmoid. The lower bowel cannot be inspected as a simple tube. It should be thought of as a room visualized by the examiner from the doorway, in position to inspect all four walls of the room. This visualization is, of course, made possible by air distention secured by the position of the patient, or, in carefully selected cases, by inflation of the bowel.

Frequently diagnosis of certain ulcerative lesions is made by microscopic examination of material obtained direct from the ulcerated field, and many neoplastic lesions are properly labelled only by a biopsy. Both manipulations are extremely simple with the aid of proper instruments.

In a large proportion of instances the examination is not completed until a barium enema has been given and x-ray report made. Judgment is, of course, necessary to determine when this should be done, but there is no question that x-ray examination is best done at least twenty-four hours after the proctoscope has been passed, because of frequency of spasm following instrumentation.

It is hardly necessary to say that routine proctologic examinations will result in early recognition and cure of many conditions which are now frequently overlooked until the lesion is either hopelessly advanced or, what is almost as bad, the patient has become a marked neurasthenic.

Appendicitis—It is my conviction that the technic in the operative treatment of appendicitis has about reached the highest point of efficiency. Early recognition and early operation offer the greatest opportunities for lowering the mortality in appendicitis. Diffuse or spreading peritonitis demands treatment of the patient for the peritonitis and waiting until such time for surgical intervention as the emergency demands. The wise execution of this policy is our only hope for materially lowering the mortality in appendicitis.—*Harris, Texas State J. Med., Jan. '35.*

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BREAST AND ARTIFICIAL FEEDING

"There is no question that the artificial feeding of infants has taken remarkable strides in the past few years. It has had such success that in the minds of many physicians and perhaps a large proportion of the public there has grown up the idea that artificial formulas can safely replace breast milk without any detrimental results to the child. So far as we know, this has been based on empirical observations and has not been supported by sufficient evidence to be regarded as in any way proof. Although in the past few years many accessory foodstuffs have unquestionably been discovered, notably vitamins, which are necessary for life, and it has been discovered also that in many instances the inorganic materials were of far greater importance than had been suspected, one cannot be at all certain that all the elements which go to make up a perfect food have been discovered. More than likely many are not known. Nor can one be sure from present knowledge of the quantity of each of the known elements necessary for an ideal food for an individual."

"Some may state that breast milk is not an ideal food, and this will have to be ad-

mitted to be the case in a few instances; but these cases may be regarded as pathologic rather than physiologic."

Thus do Grulee and his co-workers¹ open their excellent contribution in which they seek to prove that breast feeding is still, by long odds, the method of choice. The material upon which their studies are based consists of the records of 20,061 babies under the care of the Infant Welfare Society of Chicago for at least nine months after birth during the years 1924-1929 inclusive. The investigators hold that "there are probably many standards by which one may judge the effect on the organism of the food offered. It may certainly be said that weight alone is by no means the only criterion by which a food's value may be judged. Other physical qualities, such as blood, tissue turgor or bone development, may be regarded as of importance. The child's resistance to infection may also be looked on as one of the chief means by which one may judge of the effectiveness of the food offered . . . It seemed to us, therefore, that it would be of value to survey a large number of infants as to the incidence of infection and other disturbances allied to it with respect to whether they were fed with breast milk or artificially."

In the study of morbidity the infections were divided into three main groups: respiratory, gastro-intestinal and unclassified infections. "There were 3,646 infants in the breast-fed group with infections, or 37.4 per cent. There were 4,629 infants with infections in the partially breast-fed group, or 53.8 per cent, and 1,085 infants with infections in the artificially fed group, or 63.6 per cent." And in the study of mortality the same trend is evident. During the five year period there were 218 deaths. Of the infants that died 6.7 per cent were in the breast-fed group, 27.2 per cent in the partially breast-fed group and 66.1 were among the artificially fed.

Everyone is aware of the great improvement in the care and feeding of infants during recent years and of the enormously de-

1. Grulee, Clifford G., Sanford, Heyworth N., and Herron, Paul H.: Breast and artificial feeding: influence on morbidity and mortality of twenty thousand infants, J. A. M. A. 103: 735 (Sept. 8) 1934.

creased infant mortality that has been the fortunate result. And that progress will continue to be made one can scarcely doubt. But it is beneficial to have men like Grulee and his collaborators forcefully remind us that our artificial feeding methods still have many shortcomings and leave much to be desired. Their investigation has been so painstaking and thorough, has covered so many thousands of cases and extended over so many years that it is difficult to see how anyone can challenge their conclusions; which, in part, read as follows:

"These figures do not need any particular explanation or discussion. It will be observed that in every instance, from the point of view of feeding, breast feeding gives a much greater immunity to infections than artificial feeding. It is shown that even a partial breast feeding gives considerable immunity." "Roughly it shows that, baby for baby, the breast-fed infant will have a 50 per cent better immunity than one that is artificially fed." "Obviously, therefore, if one hopes to decrease further the infant mortality of this country it must be done by encouraging breast feeding."

WHY NOT MORE POST-GRADUATE COURSES FOR ALABAMA DOCTORS?

The need for post-graduate instruction is anything but new, and efforts to extend and improve post-graduate teaching have been made for generations. Dr. John A. Wyeth, of Alabama, was one of the first to realize this need; and, some years after the Civil War, he founded the New York Polyclinic with this end in view. But it has always been an impossibility for many physicians to leave their work for any considerable length of time and travel great distances to the large medical centers, where only the needed instruction could be obtained.

During the last few years sensible and effective steps have been taken to overcome these hitherto insurmountable difficulties by having competent post-graduate instruction brought to the practicing physicians, especially in the smaller towns. These "refresher" courses appear to have been quite successful indeed, and the demand for more of such activities continues to be heard. So

far, the bulk of these "refresher" courses has been confined to obstetrics, prenatal and postnatal care, and pediatrics, but other subjects are beginning to be added as rapidly as possible.

The State of Virginia has been conducting such courses for the last two and one-half years and the reports recently received are most encouraging. In Virginia lecture-clinics have been held at various points in the state at a cost of about \$11,000.00 per year. The program was financed in three ways: (1) By a direct grant from the Commonwealth Fund of New York City; (2) By an appropriation from the State Medical Society; and (3) By fees from doctors attending the lecture-clinics. A full-time clinician, Dr. M. E. Lapham, was secured from the University of Pennsylvania Medical School to carry on the prenatal and postnatal instruction and an executive secretary was appointed to direct the organization. "There has been an average continued attendance of 76 per cent of the enrolled men in classes," says Dr. Lapham in his report. "And," he adds, "about half of the physicians who attended wrote that they had been greatly benefited by the course." Dr. George M. Lyon, the clinician in charge of pediatric instruction, makes a similar report and says that he was well received, the physicians were interested and cooperative, and the venture was a success. So much good resulted from the courses in obstetrics and pediatrics that, not only will they be continued, but plans are now being made to broaden the scope of this work so as to include other "practical problems that naturally confront the practitioner."

Here in Alabama many practicing physicians had the opportunity within recent months to attend the splendid series of lectures by Dr. James R. McCord, of Atlanta, who, under the auspices of the Children's Bureau of the United States Department of Labor, spoke at eleven points in this State. The choice of Dr. McCord for this work was particularly fortunate. His deep knowledge of obstetrics, his forceful method of presenting facts, his earnestness and sincerity made an impression that will not soon be forgotten. That his audiences were highly pleased with him and his excellent moving pictures is proved by the fact that

the same doctors were on hand every afternoon from Monday to Friday, inclusive, and many of them had to travel from twenty to forty miles each way.

It would seem that the "refresher" course has proved its value to practicing physicians, especially in the outlying districts. By such means, many good men can be kept stimulated and informed, whereas it was formerly difficult for them to keep abreast of the times. But in Alabama only a beginning has been made, and the question of financing these splendid programs must be faced and dealt with. If the financial barrier can be overcome, Alabama will then, like Virginia, be in a position to bring other adequate post-graduate courses to its physicians. The hope is expressed that the State Board of Censors, in collaboration with other officers of the Association, will take under advisement the feasibility of working out plans for other "refresher" courses similar to the one conducted by Dr. McCord. It is felt that no better investment could be made of any surplus Association funds than that of promoting a program of the newer scientific things in medicine for all of the doctors in the State.

W. W.

The Medical Practice Act Can Be Enforced, and will be enforced, if the medical profession, individually and collectively, and those good people who are desirous of protecting the credulous public against quacks and quackery, and incompetence in the sick room, will take an interest in the matter and make it an issue. True, the courts and the prosecuting authorities must be in sympathy with the movement, but it is a foregone conclusion that if the public demonstrates anything like the interest displayed by quacks and their defenders the prosecuting machinery will function, or try to function.

As a rule, doctors hesitate to become active in the prosecution of illegal practitioners, because of the disposition of the public to accuse them of selfish interests, an accusation which embarrasses the average doctor. Just why the doctor should feel embarrassed because somebody accuses him of looking out for his own interests, we do not exactly know, except that it is in keeping with that modesty which the profession of medicine inspires in its practitioners. *Editorial, Texas State J. Med., Jan. '35.*

The Mobile Meeting

April 16-18

The eighty-eighth year of the Medical Association of the State of Alabama and the sixtieth anniversary of the founding of the State Department of Health bring to the profession an inspiring program and a happy meeting place.

Recollections of other days spent in annual session in Mobile make one keenly desirous to include Alabama's Port City among the places to be visited in 1935. Those who have attended meetings there in the past will need no urging to do so again; new members of the Association will want to experience Mobile's kind of hospitality.

The session is scheduled to convene at 9:00 A. M. on Tuesday, April 16, with President W. M. Cunningham of Jasper in the chair, and to continue through a portion of Thursday, April 18. Tuesday morning's program will include the President's Message, reports of officers, and reports of all committees. Chief among the latter, because of the many vital questions now before the profession, will be that of the Committee on Legislation and Medical Economics. All who have an interest in economic security should hear Chairman John Martin's presentation of the Committee's report.

GUEST SPEAKERS

Guest essayists who will honor the Association by their presence include:

Arthur Neal Owens, New Orleans—Skin Grafting: Its Relation to General Surgery.

Geo. Henry Semken, New York City, Jerome Cochran Lecturer—A Consideration of Tumors of the Breast.

Edward Nicholas DeWitt, Bridgeport, Conn.—The Detached Retina.

Edgar Burns, New Orleans—Renal Calculi.

Wm. B. McGee, New Orleans—The Treatment of Severe Preeclampsia and Eclampsia with Ephedrine.

MEMBER ESSAYISTS

James S. McLester, President-Elect, American Medical Association—Trends of Medical Practice.

R. Alec Brown and J. Otis Lisenby—Symposium on Pulmonary Tuberculosis.

C. C. Perdue—Foreign Bodies in the Food and Air Passages.

W. Hill McCaslan—The Nervous Child.

T. K. McFatter—The Safety of Low Cesarean Section in the Obstetrical Emergency.

T. F. Wickliffe—Deep Surgical Infections of the Neck.

G. C. Ussery—The Status of Hysterectomy in Rural Surgical Practice.

D. C. Donald—Acute (Hemorrhagic) Pancreatitis.

W. W. Harper—The Enlarged Thyroid.

Eugene Thames—Chronic Undulant Fever.

C. O. Lawrence—The Value of Local Applications in Diseases of the Respiratory Tract.

A. C. Gipson—The Treatment of So-Called Colitis in Infants and Children.

Earle Conwell—Problems Frequently Encountered in Recent Fractures.

Marion T. Davidson—Some Little Known Manifestations of Allergy.

C. Hal Cleveland—Chronic Hoarseness.

Gilbert Douglas—Conception and the Safe Period.

Cabot Lull—The Doctor and Life Insurance.

John L. Branch—Infections of the Hand.

DURATION OF MEETING

Following the custom instituted at the last annual meeting, the Association will be in session three days—Tuesday, Wednesday, and Thursday, April 16, 17 and 18. Such portion of the last day as may be necessary will be devoted to the business of the Association, sitting as a State Board of Health. The details of this and the entire program will be set forth in the March issue of the Journal.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

MEDICAL ECONOMICS

J. N. Baker, M. D., Secretary,
State Board of Censors

At a regular meeting of the State Board of Censors—held in Montgomery on January 5th, 1935—Dr. J. S. McLester, a former member of this Board and now President-Elect of the American Medical Association, appeared before it, and briefly discussed some of the problems of medical economics, making reference to the fact that newspaper reports were to the effect that Senator Hugo Black, of Alabama, contemplated the introduction into the Federal Congress of a bill dealing with health or social insurance. At the conclusion of his remarks he presented a preliminary draft of a resolution to which he requested the Board to give consideration and modify in such manner as might be deemed wise. After considerable discussion of this topic and of the resolution, the Board finally adopted the resolution shown below:

WHEREAS, The daily press has repeatedly stated that Senator Hugo Black is preparing a bill

dealing with medical practice, the tendency of which, this Board fears, would be toward the socialization of medicine; and

WHEREAS, The Alabama medical profession in general has not had access to the proposed bill; and

WHEREAS, This Board realizes the great harm that could result both to the public and to the physician, from ill-advised, medical legislation, tending toward the lowering of medical standards; and

WHEREAS, This Board is desirous that nothing be done which would destroy the initiative, independence, and self-respect of the medical profession, and the feeling of mutual confidence between physician and patient; and

WHEREAS, It hopes that nothing tending toward governmental control of the practice of medicine will be instituted; therefore be it

Resolved, That this Board of Censors, the Executive Committee of the Medical Association of the State of Alabama, respectfully requests Senator Black to defer action in this matter until the President's Committee on Economic Security has reported; and be it further

Resolved, That Senator Black be invited to meet with this Board at his convenience, and before his bill has been introduced.

On January 7th, the Jefferson County Medical Society, at its regular meeting,

adopted a somewhat similar resolution which is given below:

The Jefferson County Medical Society is deeply concerned over the proposed plan of Senator Black to offer before Congress a bill tending toward the socialization of medicine or the placing of medical practice under government control. This Society would deplore deeply any movement in that direction. The members are keenly conscious of the fact that the welfare of the patient demands that the intimate relationship which has existed for so long between doctor and patient should not be disturbed. The members of this Society feel that to place the medical profession under governmental control, either directly or remotely, and thus to take away from the physician his professional independence would tend to destroy initiative and efficiency, and would do immeasurable harm to American medicine. The one who, in the last analysis, would suffer most would be the patient.

The Jefferson County Medical Society hopes that Senator Black will permit the development of medicine to proceed in an orderly manner and will not offer any bill which would tend to jeopardize the professional and economic independence of the physician.

Upon receiving a copy of the resolution adopted by the Board of Censors, Senator

Black replied to the Secretary of the Board as follows:

"Your letter of January 8, 1935, containing copy of resolution adopted by the Board of Censors of the Medical Association of the State of Alabama, received.

"I have not offered any bill upon the subject of health insurance up to the present time. I do not have any bill prepared although I have offered a resolution asking that the Senate Committee on Education and Labor make a study of the entire subject.

"When the resolution comes up, the physicians of the entire nation will have an opportunity to be heard. The same thing would be true, of course if any bill should be offered. I would be very glad indeed to have the views of the State Board of Censors, but because the Senate is in session I shall not be able to come to Alabama in the immediate future.

"This is a subject which should have not only the attention of those who are interested in passing the law for the benefit of the general public, but which should have the careful attention of the doctors of the nation.

"For your information, I am enclosing you copy of a speech I made on this subject which is probably the reference to which the Board of Censors of the Medical Association of the State referred to."

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.,
State Health Officer in Charge

WHAT DOES THE FUTURE HOLD FOR ALABAMA'S HEALTH DEPARTMENT?

All of the traditions and training of a medical man tend to the development of an optimistic and hopeful attitude toward the affairs of life. Amid the multitudinous crashes falling on all sides and on all people and all things, Alabama's Health Department not only did not escape severe financial blows, but received some which, however unmerited, came near proving solar plexus ones. The first extra session of the Legislature of 1932 saw fit to reduce by 42 per cent the former appropriations made for health work. In a spirit of optimism this blow was received, and budgets revamped and personnel reduced to come within the reduced amount allotted. About this time, also, the Budget and Financial Control Act became operative

whereby the State could not spend more than it actually took in; and also providing that the monies in the general fund be prorated amongst those departments receiving their sustenance from this source. It so happens that the Health Department has no ear-marked funds and must needs feed one hundred per cent from the general fund. So, what actually transpired was that the Health Department, after rocking along for some four months in 1933 on its reduced appropriation, was informed that but little was left for operations for the balance of that year. Only those absolutely essential functions classified as the "police powers" vested in the Health Department could be preserved. Just here is where that optimistic and hopeful spirit, referred to above, stood us in good stead. We donned our brass-buttoned blue uniforms, and, with billy in hand, proceeded to carry on under this new guise. The state-wide tuberculosis and venereal disease and oral hygiene programs were abolished

in their entirety and all other activities pared to the bone; organized county health units numbering fifty-four fell to forty-six, and the field work conducted through them were much curtailed. With the beginning of the fiscal year 1933-1934 came along the many activities sponsored by the Federal Government through Civil Works Administration, the Emergency Relief Administration and others. Through these agencies and because of its efficient machinery, the Health Department was in position to avail itself of these opportunities and to prosecute projects in malaria control, drainage and sanitation which would have required several years to accomplish without this aid. Since the beginning of the fiscal year of 1934-1935, the outlook seems much brighter than most, if not all, of the present appropriation will actually be made available to us and as a consequence we are beginning to rebuild the torn-down fences. Already several new health units have been launched in counties and the prospect of still others falling into line is promising. It must be said that what has happened to Alabama's Health Department in the past has not come through any lack of appreciation of its value or work, but rather because of the desperate financial straits in which the State has found itself. Even a pessimist should feel that the crest of our depression wave has been reached and should execute "an about-face" and again and with courage and hope begin a "forward march." This Alabama's Health Department has resolved to do.

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

RABIES IN ALABAMA

Since the World War rabies has markedly increased throughout the world. Two factors have probably contributed to this condition. First, during the War, quarantine and regulatory measures were relaxed and in some countries have never been resumed with their former intensity. Second, the dog has become more and more popular and therefore has increased in numbers. The latter factor has undoubtedly been the main cause for the greater incidence of this disease in the United States.

The South Atlantic and Gulf States have been, and are, badly infected. According to Eichhorn¹ this "is no doubt due to the more favorable climatic conditions, permitting the wide range of dogs during all seasons and also due to the fact that in this territory a larger number of mongrel and stray dogs occur than in other parts of the United States." During the past decade the infection has become more and more prevalent in Alabama. In Table I the years 1921, 1922, 1923 are compared with 1931, 1932, 1933. The figures used for the first three-year period are taken from Eichhorn¹.

TABLE I
RABIES IN ALABAMA—TWO PERIODS, A DECADE
APART

	First Period			Second Period		
	1921	1922	1923	1931	1932	1933
Number of positive dogs' heads.....	118	161	182	474	659	643
Number of treatments given.....	*	519	586	2667	3676	3518
Number of human deaths.....	1	2	0	3	2	5

*Records not available

In evaluating the statistics given in Table I it should be remembered that in the first period the Bureau of Laboratories had not been as widely extended as it is at present and that probably its service was not available for the diagnosis of a certain proportion of animal heads. Eichhorn has estimated that for the 34 states included in his tabulation the figures obtained represent 50 per cent of the cases of rabies. As far as the treatments are concerned the statistics given are undoubtedly more accurate because the Pasteur Institute of the State Department of Health was in operation during the first period and very few treatments were given outside of this place in the years 1921-1923; also, in 1931-1933 the vast majority of exposed individuals obtained the vaccine from the State Department of Health where it is distributed free. Furthermore, it should be noted that the positive heads were those of dogs only; other animals were not included.

It will be seen that during a decade the number of positive dogs' heads increased four times and the number of treatments administered over five times. Exposure to rabid animals other than dogs accounts for the larger number of treatments.

(1) Eichhorn, A.: The present status of rabies in the United States, J. Am. Vet. Med. Ass'n. 66: 278-288, 1924.

During the past year a sharp increase in the incidence of rabies has been noted in Alabama. Reports received from other states indicate that this condition has been more or less general and not confined to this locality alone. It is recognized that the disease passes through cycles when it is especially prevalent, but the cause of these cycles, their average duration and their frequency are unknown.

In this Journal (Vol. 3, No. 9, pages 327-329) statistics on rabies for the years 1929-1933 were published. That a true comparison of the figures for the year 1934 may be obtained, there are presented in Table II the numbers, by months, of animal heads received during the years 1930-1934, inclusive.

TABLE II
ANIMAL HEAD EXAMINATIONS FOR YEARS 1930-1934 BY
ALL LABORATORIES IN STATE SYSTEM

	1930	1931	1932	1933	1934
January	98	82	165	133	202
February	101	76	151	132	207
March	109	104	150	144	223
April	113	100	158	172	202
May	113	107	155	167	275
June	120	104	149	147	290
July	93	124	152	156	190
August	80	100	124	135	175
September	88	111	134	104	151
October	70	115	111	106	156
November	53	108	133	109	134
December	68	134	103	126	148
Totals.....	1,106	1,265	1,685	1,631	2,353

It will be seen that during 1934, 668 more heads were received than in any other year during the period.

In Table III are given the number of positive, negative and unsatisfactory heads examined during 1934.

TABLE III
ANIMAL HEADS EXAMINED DURING 1934

	Re- ceived	Pos- itive	Neg- ative	Unsatis- factory
January	202	103	86	13
February	207	72	132	3
March	223	107	111	5
April	202	100	92	10
May	275	115	146	14
June	290	100	152	38
July	190	62	101	27
August	175	71	89	15
September	151	75	64	12
October	156	56	88	12
November	134	72	56	6
December	148	84	62	2
Total.....	2,353	1,017	1,179	157

Over 100 positive heads were diagnosed in each of five months—January, March, April, May and June—of last year.

The data concerning treatments distributed by months for the past five years are presented in Table IV.

TABLE IV
RABIES TREATMENTS DISTRIBUTED BY THE STATE
DEPARTMENT OF HEALTH

	1930	1931	1932	1933	1934
January	107	173	428	306	549
February	144	171	329	383	315
March	193	137	248	342	575
April	273	208	377	336	565
May	175	235	373	382	766
June	144	236	284	345	605
July	108	255	414	195	414
August	97	203	270	264	447
September	147	263	314	245	280
October	163	262	186	178	301
November	129	185	252	265	345
December	105	279	201	277	352
Totals.....	1,785	2,667	3,676	3,518	5,514

The total of 5,514 treatments for 1934 exceeds that of 1932, the previous high year, by 1,838.

In May 766 treatments, approximately 25 a day, were distributed.

The statistics presented above demonstrate better than words the rapid extension and growing menace of rabies. As it now exists this disease is epizootic and epidemic throughout the greater portion of the State.

BUREAU OF PREVENTABLE DISEASE CONTROL

D. G. Gill, M. D., Director

COMMUNICABLE DISEASES DURING 1934

A tabulation of the cases of the various communicable diseases reported in Alabama in 1934, as compared to the previous year and to the median of the preceding nine years, appears below. This bookkeeping as to the incidence of the various diseases reveals the progress being made in their control.

Certain of these diseases have no specific means of prevention and they are subject to wide fluctuations from year to year. Influenza and measles are probably the two best examples of this type of disease. In neither is there much natural immunity and they are likely to reach epidemic form wherever introduced. Of the two, influen-

za was at a relatively low ebb, while more measles was reported than in any previous year.

COMMUNICABLE DISEASES REPORTED

	1934	1933	Median 1925-1933
Typhoid	678	658	992
Typhus	271	823	72
Malaria	6,473	4,509	3,698
Smallpox	23	82	378
Measles	15,443	1,729	4,193
Scarlet fever	879	1,211	1,211
Whooping cough	2,665	1,652	1,565
Diphtheria	1,579	1,572	1,800
Influenza	3,336	6,947	9,976
Mumps	785	911	925
Poliomyelitis	50	28	57
Chickenpox	1,426	758	1,423
Tetanus	49	57	59
Tuberculosis	2,942	3,189	4,142
Pellagra	374	626	702
Meningitis	43	44	63
Pneumonia	3,200	2,194	3,313
Syphilis	3,135	2,064	1,965
Chancroid	46	26	92
Gonorrhea	2,215	1,685	2,154
Ophthalmia neonatorum	15	14	24
Trachoma	8	4	16
Tularemia	15	6	6
Undulant fever	45	12	11
Dengue	1,072	5	

Typhoid fever, which is used as a measuring rod of the efficiency of public health work, showed a slight increase over the preceding year. This increase was due entirely to two city epidemics traceable to a breakdown in the water supplies. Otherwise, the incidence throughout the State was very favorable. Diphtheria was stationary, while malaria showed the increase prophesied a year ago. Smallpox set another new low record for the State—one that will probably not be equaled again since the status of vaccination is far from satisfactory.

The marked decrease in typhus fever is of interest since in the early months of the year an intensive rat eradication campaign was conducted under C. W. A. auspices. A continuing rat control program is probably required, however, for permanent results.

Dengue fever, after several years absence, appeared in a number of places, particularly along the Georgia border. This disease was imported to Miami and spread from there northward. By intensive work the disease was prevented from gaining a foothold in the interior of the State, but was confined to the few border foci.

The increase in venereal diseases reported probably represents the increased load thrown on private physicians by the discontinuance of most of the free clinics formerly operated.

BUREAU OF SANITATION

G. H. Hazlehurst
Director

SWIMMING POOLS

Constructed swimming pools are coming more and more to play a part in community life. The desire for refreshment during the hot days of summer is held in check largely by the disinclination of the individual to use a pool frequented by other people. To cater to the desire it is necessary to overcome the prejudice. This can only be accomplished by convincing the public that the pool can be made, and in fact is, clean and healthful. In order to do this, the pool must be planned and designed with this purpose in mind. An undertaking which ignores these conditions is simply courting ultimate failure. Consideration must be given to the proper location in regard to a safe and adequate source of water, the need of constant disinfection, the depths at various points in the pool, the size and water volume per expected bather, the bottom slope, side walls, provision for filling, emptying and cleaning, scum gutters for removing flottage, adequate dressing rooms, sterilization of towels and bathing suits, pre-bathing and toilet facilities, type of floor and lockers for disease prevention. Of course, it is evident that clean water is the most important requisite and that it must be sparkling, clear, free from visible foreign material, free from excess chemicals that might irritate the eyes, throat, or skin of the bather and of safe sanitary quality at all times.

There has been noted for the past several years a decided improvement in the construction and operation of public pools. It is believed that better swimming pool construction and operation was advanced several years over normal by the impetus of the C. W. A. Here each pool built received the constructive criticism of the Health De-

The death rate decreases from infancy to the age groups five to nine years, and after that point tends to increase with age. The probability of dying from tuberculosis appears to be least at five to nine years of age. When a comparison is made of the rate, according to color, it is of interest to note that it increases among the colored population up to thirty-five to forty-four years of age, and declines after that point. This indicates the disease to be more acute in character among the colored than among the white population.

A CORRECTION

Table on page 256 of the January Journal showed an error in death rate for Macon County. The corrected rates are, white —, and colored 316.4.

Care Of The Indigent Sick—The physician has carved a niche for himself in the records of civilization which can never be erased. Unquestionably he will continue to perform his duty to humanity as far as he is able to do so, but we cannot question the fact that it is impossible for the medical profession to assume responsibility for the care of the indigent sick without just compensation for their services. Plans for the care of the indigent sick, both in hospitals and in their own homes, have either been worked out or are under consideration, but it is not believed that the question has been fully answered as yet. The medical profession must take the lead in working out with the governmental agencies the responsibility for providing this care in some manner which will be satisfactory to the medical profession, to the citizens and to the patients.

A satisfactory solution of this problem requires the development of a cooperative plan between the medical profession and the official agencies, preserving the relationship of the physician to the patient, in addition to permitting the patient to select the physician of his choice to render the medical care necessary. There should never be any need for a change in the relationship between the physician and patient. From the standpoint of self-protection, the indigent sick must be aided, and, unless this is done, they will inevitably become a menace and a continuing burden on the entire community in which they live.

In conclusion, let me reiterate that the care of the indigent sick must not continue to be a burden on the practicing physician but a responsibility of the local communities as a whole. The physician recognized the need for the control of epidemic diseases and developed public health work. The medical profession again must take the lead in working out a plan that will not only provide adequate care for these people but one that will also provide fair compensation for the physician.—*Riggin, Virginia Med. M., Jan. '35.*

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	Nov.	Dec.	Estimated Expectancy
			Dec.
Typhoid	30	32	46
Typhus	18	22	8
Malaria	722	290	112
Smallpox	2	7	11
Measles	244	475	73
Scarlet fever	152	109	164
Whooping cough	76	207	95
Diphtheria	226	135	232
Influenza	234	738	324
Mumps	67	77	31
Poliomyelitis	3	1	2
Encephalitis	2	0	2
Chickenpox	81	248	142
Tetanus	5	3	5
Tuberculosis	227	193	254
Pellagra	14	58	20
Meningitis	1	8	3
Pneumonia	177	422	380
Syphilis (private cases)	220	404	130
Chancroid (private cases)	1	6	4
Gonorrhea (private cases)	125	181	129
Ophthalmia neonatorum	1	2	2
Trachoma	0	2	1
Tularemia	0	0	1
Undulant fever	5	3	2
Dengue	262	23	0
Amebic dysentery	3	1	0
Rabies—Human cases	0	0	0
Positive animal heads	72	64	—

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

ALABAMA, NOVEMBER 1934

Int. List Numbers (1929 Revision)	CAUSES	Number of Deaths			*Death rate per 100,000 Population	
		Total	White	Colored	1933	1934
	ALL CAUSES	2456	1377	1079	†10.2	†10.8
1, 2	Typhoid fever	8	2	6	5.3	3.5
3	Typhus fever				0.9	
6	Smallpox					
7	Measles	6	2	4	0.4	2.6
8	Scarlet fever	3	2	1	1.3	1.3
9	Whooping cough	15	9	6	4.4	6.6
10	Diphtheria	20	15	5	9.3	8.8
11	Influenza	54	35	19	26.6	23.7
107-109	Pneumonia, all forms	220	127	93	79.9	96.6
16	Poliomyelitis	2	1	1		0.9
22	Tetanus	3	1	2	2.7	1.3
23-32	Tuberculosis, all forms	119	53	66	61.3	52.3
23	Tuberculosis, pulmonary	109	51	58	60.4	47.9
38	Malaria	30	16	14	13.3	13.2
45-53	Cancer, all forms	122	86	36	52.8	53.6
59	Diabetes mellitus	19	15	4	13.8	8.3
62	Pellagra	33	16	17	10.2	14.5
82	Cerebral hemorrhage					
	apoplexy	150	93	57	53.7	65.9
90-95	Diseases of heart	319	201	118	138.9	140.1
	Diarrhea and enteritis					
	Under 2 years	36	23	13	11.1	15.8
120	2 years and over	12	8	4	4.9	5.3
130-132	Nephritis	217	133	84	82.1	95.3
140-150	Puerperal state, total	29	17	12	19.1	12.7
140-145	Puerperal septicemia	13	7	6	6.7	5.7
157	Congenital malformations	12	10	2	8.0	5.3
158-161	Congenital debility and other diseases of early infancy	120	75	45	43.1	52.7
162	Senility	33	11	22	13.8	14.5
163-171	Suicides	19	17	2	8.4	8.3
172-175	Homicides	74	20	54	20.4	32.5
176-198	Total accidental causes	158	107	51	67.5	69.4
	Other specified causes	363	202	161	169.1	159.4
199, 200	Ill-defined and unknown causes	260	80	180	100.8	114.2

*Annual rate based on October deaths for year stated.

†Death rate per 1,000 population.

Woman's Auxiliary

Minerva S. Roe
(Mrs. Lee Wright Roe)
State Publicity Chairman
Mobile, Alabama

The Auxiliary to the Jefferson County Medical Society began its club year with an enthusiastic meeting in the home of Mrs. E. M. Scott. Co-hostesses with Mrs. Scott were: Mrs. W. S. Armour, Mrs. A. L. Atwood, Mrs. J. E. Garrison, Mrs. Hughey Greene, Mrs. J. H. Knight, Mrs. C. F. Lewis, and Mrs. Cas. Reagan. Three new members were added to the roll. Mrs. Marion Davidson presided in the absence of Mrs. E. M. Norton who was ill. Mrs. R. O. Russell is Secretary of the Jefferson unit.

The Montgomery County unit, a newly



MRS. FRED DENSON
Bessemer

State President 1934-35 who will preside at Annual Meeting in Mobile, April 16-18.

organized one of which the Association is proud, held its November meeting at the home of Mrs. Gibson Reynolds, President. Mrs. A. E. Thomas is Secretary. The Auxiliary is wide awake and working hard. Its project for the year is to be a day nursery, already started by the Government, and to render assistance in the care of the children. Mrs. Clarence Weil is Chairman of the day nursery committee, and the group is assisting in the work being done in the nursery in the North Montgomery Settlement House.

The meetings take place on the fourth Tuesday of each month with a luncheon.

* * *

The first fall meeting of the Mobile County Medical Auxiliary was held October 23 at the Woman's Club with a luncheon. The Auxiliary is well organized and proud of its large membership. Mrs. Robert Cochrane of Mt. Vernon is the capable President. The Auxiliary has three major projects: The Lettie Daffin Perdue Scholarship fund; the Alabama State Medical Convention which meets in Mobile in April; and sponsoring a play, the receipts to go to the Preventorium. Two donations from friends, one of ten dollars and one of five dollars, have helped to swell the scholarship fund, and are much appreciated. The officers are: President, Mrs. Robert Cochrane, Jr.; First Vice-President, Mrs. R. V. Taylor; Second Vice-President, Mrs. C. C. Perdue; Secretary, Mrs. R. P. Lester; Treasurer, Mrs. A. M. Cowden; Corresponding Secretary, Mrs. V. H. Hill; Membership Chairman, Mrs. Ruffin Wright; Historian, Mrs. D. O. McCrary; Public Relations, Mrs. P. D. McGehee; Scholarship Chairman, Mrs. E. S. Sledge; Music, Mrs. Toxey Haas; Hygeia, Mrs. C. C. Cleveland; Telephone, Mrs. I. M. Gravlee; Publicity, Mrs. Selden H. Stephens.

The Mobile County Auxiliary takes this opportunity to extend a most cordial invitation to all members of County Auxiliaries in the State to come to Mobile for the State Convention in April.

Program of the annual session will constitute a part of the general program of the Association, soon to be issued by the Secretary. Preliminary announcements appearing in this issue of the Journal indicate an interesting meeting.

Book Abstracts and Reviews

The Year Book of General Medicine. Infectious Diseases, edited by George F. Dick, M. D. Diseases of the Chest, edited by Laurason Brown, M. D. Diseases of the Blood and Blood-Forming Organs and of the Kidneys, edited by George R. Minot, M. D., and William B. Castle, M. D. Diseases of the Heart and Blood Vessels, edited by William D. Stroud, M. D. Diseases of the Digestive System and Metabolism, edited by George F. Eusterman, M. D. The Year Book Publishing Company, Incorporated, 304 South Dearborn Street, Chicago, Illinois. 1934. Cloth. 818 pages. Price \$3.00.

The 1934 Year Book of Medicine contains the usual number of abstracts and is edited a little better than most of the year books for this year. The reviewer always derives much satisfaction from the remarks which the editors place after the abstracts. The advances in general medicine during the past year were not outstanding, but there were many studies which helped to clarify the status of certain investigations begun in earlier years. Advance in arthritis is still slow. The solution of the problem is not yet in sight. The value of the work of Graham, Havens, and Wells in the laboratory of our own State Board of Health on the value of alum-precipitated diphtheria toxoid is confirmed by the studies of Jones. Foshay described a new diagnostic measure in early tularemia, using an intradermal injection of a modified vaccine and he has experimented in treatment of this disease with goat serum. Artificial pneumothorax has extended its field of usefulness to include the treatment of unilateral lobar pneumonia. The part played by amidopyrine in the production of granulocytopenia is emphasized in several articles. Patterson describes a test for determining rapidly a high increase in blood urea. There are abstracts of several excellent articles describing the cardiac neuroses, but none on an effective method of treatment. The use of vagotonin, an internal secretion of the pancreas, is suggested for the treatment of hypertension. There are several articles on vascular diseases of the extremities with a description of Hermann's method of alternate negative and positive pressure to improve the circulation in limbs with narrowed arteries. There is plenty of valuable information in this book for anyone who wants to dig for it.

C. K. W.

Human Anatomy: Double Dissection Method. By Dudley J. Morton, M. D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University. Columbia University Press, Publishers, New York City. 1934. 2 volumes. Cloth. \$6.00.

The Columbia University Press has published these two volumes as an aid to students and instructors in anatomy. They are intended as a guide for two dissections, the first being restricted to the larger structures and the visceral organs; the second to the vascular and nervous systems. The volumes contain detailed instructions for dissection, an outline for study of the parts found and for definition of terms in order to impress them in the student's memory. There are no anatomical drawings, only a few diagrams—but these volumes are not intended as a substitute for a text-book on or atlas of anatomy, but as guides for dissection and

study they are complete and efficient. The new terminology may be confusing to those whose student days are far behind but the book does not belong on their shelves. It is intended solely for the medical fledgling delving for the first time in the mysteries of the human body and attempting to master in a brief 360 hours (only 30 days of 12 hours each) enough anatomy to last for thirty or forty years of active practice.

C. K. W.

Year Book of Urology. Edited by John H. Cunningham, M. D., Associate in Genitor-Urinary Surgery, Harvard University Post-Graduate School of Medicine. The Year Book Publishers, Incorporated. 304 South Dearborn Street, Chicago, Ill. 1934. Cloth. \$2.25.

The accumulated knowledge of the physiology and pathology of the urinary tract and innumerable therapeutic achievements have transformed urology into a highly specialized field. The Year Book gives a summary of the work done in this particular field.

There is a review of the various factors influencing renal function from the Section on Urology of the Royal Society of Medicine. There are several contributions dealing with the ketogenic diet as used in urinary infections. New views on the subject of transurethral resection, the factors involved in calculus formation, especially the vitamins A and B, and the recent advances in intravenous urography. The treatment of urinary tuberculosis is discussed in detail. From the International Urological Congress comes an article on renal tumors. The results of ureteral transplantation are analyzed. Infections of the bladder are discussed in several articles.

The abstracts are well written and carefully selected and indicate a large amount of original work in urology during the past year.

H. G.

The Heart Visible, A Clinical Study in Cardiovascular Roentgenology in Health and Disease. By J. Polevski, M. D., Attending Physician and Cardiologist, Newark Beth Israel Hospital. F. A. Davis Company, Publishers. Philadelphia. 1934. 183 pages with 122 illustrations. Cloth. \$5.00.

In less than 200 pages, the author has condensed most of the important facts dealing with the variations in size, shape and position of the heart as seen in x-ray pictures and on fluoroscopic examination. After a brief description of the normal heart as seen in the antero-posterior and oblique positions, the author describes the variations from the typical picture due to extra-cardiac conditions and the changes due to valvular disease, congenital heart disease and diseases of the pericardium and of the great vessels. The taking of an x-ray of the chest is one of the simplest tasks of the roentgenologist. The interpretation of x-rays of the heart requires careful observation, and knowledge of the theory of interpretation plus practical experience. An x-ray examination of the heart by a thoroughly competent examiner can give a vast amount of information to confirm or modify the clinical diagnosis. Reading this book of Polevski's may not make one an expert in interpretation of x-rays of the heart, but careful study of the volume should go a long way toward

making him reasonably proficient in this type of x-ray diagnosis.

C. K. W.

Minor Surgery in General Practice, by W. Travis Gibb, M. D., Consulting Surgeon, City Hospital and Central and Neurological Hospitals; Formerly Attending Surgeon, Workhouse and Penitentiary Hospitals and Hospital for the Aged and Infirm Poor, New York, N. Y. 429 pages with 148 illustrations. 1934. Paul B. Hoeber, Inc., Publishers, Fifth Avenue, New York City. Price \$5.00.

Here is a volume of medium size dealing primarily with minor surgery from the standpoint of the general practitioner. It is therefore curt in style, helped by practical illustrations. The general principles of minor surgery—the essential instruments, the proper methods of applying dressings, the types of sutures and suture materials—are first described. The necessity of asepsis is stressed and stressed. The various regions of the body are discussed from both diagnostic and operative points of view. An ample part of the book is devoted to fractures. Closed forceful obliteration of ganglia of the wrist and the injection treatment of hemorrhoids and varicose veins are favorably discussed by the author. While intended primarily for the general practitioner, it contains a large amount of material which will prove useful to the surgeon.

J. L. B.

The 1934 Year Book of General Surgery, edited by Evarts A. Graham, A. B., M. D., Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis. The Year Book Publishers. Chicago, Illinois. 815 pages with illustrations. 1934. Price \$3.00.

The publishers of this book deserve much credit for having prepared a thorough review of contemporary surgical literature, not only from this country but from several European countries as well. There are many ideas about new technique and new diagnostic procedures, and several new instruments, including the Furniss intestinal clamp, are described. There is much material dealing with the surgery of pulmonary tuberculosis, of the intestinal tract and of the hepatic system. Most of the abstracts cover amply the articles they are taken from. Those that are too brief at least furnish an incentive for further reading. On the whole, the book ranks well in its class.

J. L. B.

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

In the past it has been the custom of the State Board of Medical Examiners of Alabama to hold two examinations annually for the purpose of licensing physicians to practice in this State; one in January and one in July. At the last meeting of this Board, held on January 5, 1935, it was de-

cided to hold but one examination annually, this examination to begin on the last Tuesday in June each year.

Those seeking to practice medicine in Alabama and who have been licensed by other states with which Alabama reciprocates may file their application with the Secretary of the Board at any time they desire.

* * *

The southern sectional meeting of the American College of Surgeons this year will be held in Birmingham, Alabama, on Thursday and Friday, March 7 and 8. Headquarters will be at the Tutwiler Hotel.

There will be included in this section the following states: Alabama, Georgia, Florida, Mississippi, Louisiana, and Tennessee.

An active Committee on Local Arrangements, with Dr. James M. Mason as Chairman, and Dr. Edward O'Connell as Secretary, have plans well in hand for an excellent meeting.

Following is a preliminary outline of the entire program:

THURSDAY, MARCH 7, 1935

- 8:00—9:00 Registration.
- 9:00—12:00 Operative Clinics.
- 9:30—12:00 Hospital Conference.
- 12:30—2:00 Medical Motion Pictures.
- 2:30—5:00 Hospital Conference.
- 5:00—5:30 Annual Meeting, Fellows of the College.
- 7:00—8:00 Medical Motion Pictures.
- 8:00—10:30 Scientific Session, General Surgery.
- 8:00—10:30 Scientific Session, Eye, Ear, Nose and Throat Surgery.

FRIDAY, MARCH 8, 1935

- 9:00—12:00 Operative Clinics.
- 9:00—12:00 Hospital Conference.
- 12:30—2:00 Medical Motion Pictures.
- 2:00—4:30 Hospital Conference.
- 2:30—5:30 Scientific Session, General Surgery.
- 2:30—5:30 Scientific Session, Eye, Ear, Nose and Throat Surgery.
- 8:00—10:00 Community Health Meeting.

Some of the distinguished visitors from outside of the section who will be present on this occasion are: Dr. Franklin H. Martin, Chicago, Director General, American College of Surgeons; Dr. Irvin Abell, Louisville, Professor of Clinical Surgery, University of Louisville Medical Department; Dr. George Crile, Cleveland, Chairman, Board of Regents, American College of Surgeons; Dr. Winchell M. Craig, Rochester, Associate Professor of Surgery, Mayo Foundation; Dr. Frederic W. Bancroft, New York City, Associate Professor of Clinical Surgery, Columbia University College of Physicians and Surgeons; Dr. Frederic A. Besley, Waukegan, Professor of Surgery, Northwestern University Medical School; Dr. Robert B. Greenough, Boston, President, American College of Surgeons; Dr. LeRoy Long, Oklahoma City, Surgeon, St. Anthony's Hospital; Dr. Charles L. Scudder, Boston, Consulting Surgeon, Massachusetts General Hospital; Dr. Malcolm T. MacEachern, Chicago, Associate Director, American College of Surgeons, and Director of Hospital Activities; Dr. M. N. Newquist, Chicago, Department of Industrial Medicine and Traumatic Surgery, American College of Surgeons; and Robert Jolly, Houston, President, American Hospital Association.

A cordial invitation to attend this most interesting meeting is extended not only to the Fellows and hospitals of the various states included, but to the entire medical profession at large.

* * *

Officers of county medical societies will be interested in efforts being made by the newly chosen President of the Tuscaloosa County Medical Society to enhance the usefulness of the Society to its members. Letter directed by the President, Dr. Stuart Graves, to the membership states:

This year's program for the Tuscaloosa County Medical Society has been delayed by necessary correspondence, but we hope you will feel compensated after reading it. Topics and participants are announced for twelve months in advance in order that all may prepare for discussions and so make the meetings more interesting. We have tried to include practically every member of the Society in some capacity. The object has been to provide opportunity for preparatory study and so to stimulate discussion.

The social side is also emphasized. At least two, probably three, dinner meetings are sched-

uled and in addition an old-fashioned stag picnic at which medical topics will be barred except under water. A committee headed by Doctor McBurney, our efficient ex-president, and including last year's and this year's officers, have plans for a barbecue and outing which will renew your youth. It will be in a newly discovered spot on the banks of the Warrior, easily accessible by automobile, with cool shade and clean beach; and the cost will be so slight that the valuable prizes offered in various contests will give every attendant opportunity to come away money ahead.

We have been fortunate in securing ten out-of-town speakers, including some young Alabamians who are making their mark at home and abroad. Feature evenings also will be those furnished by the staffs of Bryce and the Veterans Hospitals and the University medical faculty.

The last December dinner meeting in honor of Doctor McLester was so well attended that it has been thought worth while to try to establish such a closing dinner meeting as an annual affair in honor of some Alabama medical institution or person. A fitting start is made in honoring the Alabama School of Medicine at Mobile with a member of that former faculty as speaker and one of its oldest graduates as honor guest. The entertainment of the Society by the staff members of Bryce and the Veterans Hospitals will be reciprocated by inviting them to the December dinner meeting as guests of the other members of the Society, as we did last month.

Several members have suggested that meetings will be improved if started promptly at 8:00 P. M. and carried along expeditiously with reasonable time limits on papers and discussions. To meet this criticism has been one reason for printing the program in advance so that papers and discussions can be prepared thoughtfully and presented concretely.

Your officers have endeavored to plan a successful and enjoyable year. They appreciate the honor conferred upon them by you and will feel well rewarded for their efforts if this program wins your support and cooperation.

We cordially urge *all* physicians of the County to attend *all* meetings, whether members of the Society or not.

* * *

The Northeastern Division of the Association met conjointly with the Talladega County Medical Society at Talladega, Tuesday, January 15, 1935, Dr. W. M. Salter of Anniston, presiding.

The following were present: Drs. W. M. Salter, Anniston; D. P. Dixon, Talladega; E. B. Wren, Talladega; C. L. Salter, Talladega; J. M. Washam, Talladega; B. B. Warwick, Talladega; R. C. Stewart, Sylacauga; Jno. A. Martin, Montgomery; Felix Tankersley, Montgomery; E. H. Jones, Talladega; D. B. Harris, Munford; C. K. Weil,

Montgomery; James W. Britton, Anniston; W. C. Hatchett, Huntsville; Frank Stitt, Pell City; R. A. Martin, Pell City; J. P. Turner, Cropwell; Thos. L. Rennie, Pell City; W. H. Hutchinson, Childersburg; J. A. Sims, Renfroe; J. B. Graham, Talladega; W. G. Casey, Talladega; E. L. Trammell, Talladega; Gus Colvin, Lincoln; T. J. Patton, Oxford; E. K. Hamby, Attalla; Hugh Grey, Anniston; J. H. Hill, Talladega.

A motion was made and carried that Senator Hugo Black submit his medical relief bill to the State Board of Censors for criticism before pressing its passage.

Dr. Hamby suggested that committees be appointed from each Division of the Association to formulate plans for medical relief for the entire State. Dr. Weil discussed the Montgomery plan.

Dr. Martin of Montgomery discussed the subject of "Medical Legislation." Dr. Weil discussed "Hay Fever." Dr. Tankersley discussed the "Conservative Treatment of Sinus Infections."

Chairman Salter subdivided the N. E. Division into four smaller divisions and appointed Dr. B. B. Warwick, Chairman of the Talladega division. The Talladega division embraces Tallapoosa, Talladega, Clay, Randolph, and Coosa Counties.

* * *

RESOLUTIONS ON THE DEATH OF DR. H. L. CASTLEMAN

(Adopted by the Talladega County Medical Society)

Whereas, The Great Physician, in His infinite wisdom, on the twenty-fourth day of November, nineteen hundred and thirty-four, called from our midst our co-worker and friend, Howell Lea Castleman, and,

Whereas, Dr. Castleman was held in the highest esteem by the members of this body, both as a physician and as a friend, and,

Whereas, He had for thirty-three years been an efficient and loyal member and officer of the Talladega County Medical Society; therefore be it

Resolved, That we express the sorrow that we feel in the passing of our fellow worker and that we urge others to emulate the example of faithfulness and loyalty which he set; and be it further

Resolved, That we hereby tender our sympathy to his wife and young daughter. "The deeper sorrow carves into your being, the more joy you can contain." Though the days may now seem dark, yet,

"In the race across the days
They are victors; theirs the praise,
Theirs the glory and the pride—
They have triumphed, having died!"

What is it to cease breathing but to free the breath from its restless tides, that it may rise and expand and seek God unencumbered? He will be missed but his sojourn here meant much to those who knew him and his going should make us strive the harder to live as well. Be it further

Resolved, That a copy of these resolutions be sent Mrs. H. L. Castleman and a copy placed on the minutes of the Talladega County Medical Society.

(Signed): R. C. Stewart,
A. K. Whetstone,
French Craddock.

* * *

Philadelphia has more business houses that have been in continuous operation for a century than any other American City and of these, a few date back over an even longer period. On January 25th Lea & Feigiger celebrated the completion of one hundred and fifty years of continuous activity as publishers.

The business was established in 1785, antedating the Constitution of the United States by four years. Since then it has been in continuous operation in the same family, one of the members of the present firm being a great-great-grandson of Mathew Carey, the founder.

Carey came to Philadelphia from Dublin in November 1784. It happened that LaFayette, who had known him in Paris, was visiting Washington at Mount Vernon at the time and was returning to Princeton. Hearing of Carey's arrival, he stopped off in Philadelphia to see him and the next day Carey unexpectedly received his check for \$400.00, a benefaction with which he at once established himself in the publishing business. When La Fayette returned to America on his next visit, Carey had the satisfaction of returning this sum.

In the early days the firm gave its attention to general literature, and among its important publications were the Bible in quarto, both the Douay translation and the Authorized Version, which, for a considerable period, were the only quarto Bibles of American manufacture in the market; Weem's biographies of Washington and Marion, Jefferson's "Notes on Virginia", Bonaparte's "American Ornithology", and (in this country) the Waverly Novels, and the works of Dickens; also the works of Washington Irving.

Later it began specializing in Medicine and has continued in this field to this day.

Miscellany

ADVERTISERS' NOTES

VITAMIN ADVERTISING AND THE MEAD JOHNSON POLICY

The present spectacle of vitamin advertising running riot in newspapers and magazines and via radio emphasizes the importance of the physician as a controlling agent in the use of vitamin products.

Mead Johnson & Company feel that vitamin therapy, like infant feeding, should be in the hands of the medical profession, and consequently refrain from exploiting vitamins to the public.

* * *

COCOMALT

A food product is available containing sufficient vitamin D so that it is unnecessary to go to the expense of buying vitamin D preparations to supplement the diet. For, according to clinical tests, Cocomalt, when taken three times a day, will supply children with enough vitamin D. Cocomalt contains not less than 30 Steenbock (81 U. S. P. revised) units per ounce—the amount used to make one drink. Cocomalt is licensed by the Wisconsin University Alumni Research Foundation. Ordinarily vitamin D preparations are unpalatable, but in this form its existence is unsuspected.

In addition to its importance as a vitamin D supplement to the diet, Cocomalt is helpful where milk intake is a problem. For Cocomalt, which is designed to be mixed with milk, is truly delicious. But a word of warning must be sounded concerning products that appear to be similar to Cocomalt. For the most part these preparations are mere flavorings—a mixture of chocolate and sugar. Cocomalt, however, is a product designed as a food with vitamin content. Its tempting chocolate flavor—important as it may be in making milk more palatable—is secondary to its importance as a body-building food with vitamins.

An interesting booklet about the origin and function of all the accepted vitamins has been prepared by R. B. Davis Company, the makers of Cocomalt. It may be secured on request without cost by writing the company at Hoboken, New Jersey, Dept. 000.

The great strides taken by the medical profession in the last few years in the prevention of rickets can be traced directly to the newer knowledge and understanding of Vitamin D. Because of the discovery of Vitamin D, rickets—once a familiar childhood menace—is now rapidly becoming a rare disease in civilized countries.

Recent experiments prove beyond a shadow of a doubt that the amount of Vitamin D in the dietary of the pregnant woman determines to a large extent the quality of the teeth, the skeleton, and the perfection of form of the coming child. Thus, by the systematic "feeding" of Vitamin D and calcium to the expectant mother it is possible to safeguard the child . . . and the mother, too . . . from malformation of the bone structure.

Cocomalt mixed with milk is useful in the dietary of expectant mothers—not only because it has almost twice the food-energy value of milk alone, not only because it provides extra proteins, carbohydrates and minerals (calcium and phosphorus)—but because it is rich in Vitamin D. Cocomalt is licensed by the Wisconsin University Alumni Research Foundation under Steenbock Patent No. 1,680,818. One glass or cup of Cocomalt, prepared as directed, contains not less than 30 Steenbock (81 U. S. P. revised) units of Vitamin D. Cocomalt is accepted by the American Medical Association, Committee on Foods.

* * *

CONCENTRATED DIETS FOR INFANTS AND CHILDREN

Although the normal infant will generally thrive on breast milk and will usually do well on the properly adapted formulas of fluid, evaporated, or powdered milks now in general use, there is a group of cases in which more concentrated feedings are indicated.

As pointed out by Schick approximately a decade ago (Arch. Ped. June 1925), concentrated feedings may be advisable in healthy children who have a lowered instinct for food intake or who need high caloric feedings for fattening; in cases of nervous vomiting and pylorospasm; in children having diseases associated with difficulty in feeding, such as maladies where there is lowered tolerance of the intestine, infectious diseases, and functional distur-

bances; and in children with disorders of water balance.

Many systems of concentrated feedings have been devised, including high sugar mixtures (Schick's Dubo), butter-flour mixtures, lactic acid milks, and condensed milk. According to Abt and Feingold, however, one of the best methods is by the use of powdered milk (Arch. Ped. Oct. 1930).

A standard dried milk, such as Klim powdered whole milk or Dryco powdered milk, may be added in powder form to a milk-water mixture, thus giving a formula of higher viscosity and greater caloric and nutritional values.

"The use of powdered milks and milk derivatives in the concentration of infant formulae," say Abt and Feingold, "is simple, clean and easily applicable. It meets all the requirements of the various feeding problems, especially in those infants who show digestive disturbances. Favorable results are easily and quickly obtained. Mothers and nurses can be readily instructed in the proper preparation of mixtures containing these simple additions."

Recent clinical investigations have also demonstrated the value of concentrated feedings with powdered milk in cases of older children who are underweight or malnourished, or who are afflicted with childhood tuberculosis, rheumatism, and other debilitating conditions.

In the treatment of childhood tuberculosis, dietary requirements are higher than in the normal child, and these requirements can frequently be satisfied by supplementing the diet with powdered milk, which can be added to the common recipes used in the daily fare. As pointed out in the article reviewed in Abstract No. 2057 above, "Since the vitiated appetite is likely to rebel against increase in food volume, a means of adding nutritive value without increasing food bulk is obviously a desirable achieve-

ment."

Excellent results in fortifying milk with milk powder for use in treating rheumatic children were recently reported by Black, who stated that of all the many procedures tried, "dry milk is our best method" (Ill. Med. J. Aug. 1934).

Powdered milk offers, therefore, an effective means of dealing with malnutrition, underweight, and anorexia in children, and it is a highly efficient product for use in concentrated feedings for premature and dystrophic infants and those requiring added nutriment in an easily assimilable form.

Klim and Dryco powdered milks, and the Merrell-Soule powdered lactic acid and protein milks are among the 26 Borden products which have been accepted by the Committee on Foods of the American Medical Association, and they are available in all drug stores as ethical prescription products. A pamphlet on the use of concentrated diets for children will be sent to physicians upon request.

* * *

SHOULD COD LIVER OIL BE FLAVORED?

It is a well-known fact that young infants shy at aromatics. Older patients often tire of flavored medications to the point where the flavoring itself becomes repellant. This is particularly true if the flavoring is of a volatile nature or "repeats" hours after being ingested. Physicians have frequently used the terms "fresh", "natural", "sweet", and "nutlike" in commenting upon the fine flavor of Mead's Cod Liver Oil. They find that most patients prefer an unflavored oil when it is as pure as Mead's.

Physicians who look with disfavor upon self-medication by laymen are interested to know that Mead's is one Cod Liver Oil that is not advertised to the public and that carries no dosage directions on carton, bottle or circular. Mead Johnson & Company, Evansville, Indiana, U. S. A., Pioneers in Vitamin Research, will be glad to send samples and literature to physicians only.

ACTUAL PRACTICE IN SURGICAL TECHNIQUE WITH A REVIEW OF SURGICAL ANATOMY

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SOME OF THE COMMON INDICATIONS FOR SPLENECTOMY*

WITH CASE REPORTS

By
J. P. COLLIER, M. D.
Birmingham, Ala.

Galen, many years ago, called the spleen an organ of mystery. Today, except for some of its very obvious functions, it is still somewhat of a mystery. Splenectomy has been done for years but not for the same indications for which it is done now. The Greeks suggested that the spleen be removed in their runners, claiming that without it they could run faster. This belief was based on the fact that the speedy giraffe had no spleen. As we know the spleen today, removal probably would have made the runners slower.

Before entering upon a discussion of indications for splenectomy, it seems only proper that a brief resume be given of the possible functions and physiology of the spleen. Krumbhaar in 1925 said, "Today we can assert without fear of valid contradiction that the spleen is the largest lymphoid organ in the body. It is intimately concerned with blood cell destruction and potentially with blood cell formation; and it has a controllable reservoir system of importance in aiding the circulation in volume changes of various kinds."

This statement is practically the same as that made by Henry Gray in 1854 in his book on the spleen. Although much work has been done on the spleen since that time, few additional data have been reported.

The various functions may be listed as follows:

*From the Surgical Division of the Hillman Hospital.

*Presented to the Association in annual session, Birmingham, April 17, 1934.

1. Blood Formation: It is quite definitely proven that in fetal life the spleen is one of the most active of the blood forming organs. In adult life it is very doubtful if the spleen under normal conditions ever helps in the formation of blood. In certain abnormal conditions it probably reverts to some of its fetal functions.

2. Blood Destruction: The spleen definitely participates actively in the elimination of erythrocytes and products of their degeneration, together with bacteria and foreign material. In this matter the spleen acts as a filter, and for that reason is called "the graveyard of the blood." It has been shown that most of this function is carried out by the large mononuclear cells of the reticulo-endothelial system. After removal of the spleen this function must be cared for by tissues and cells of that system in other parts of the body.

3. Reservoir Function: Bancroft has clearly shown that the spleen is a reservoir for red blood cells and that after exercise the spleen will set up contractions and put erythrocytes into the blood stream.

4. Metabolism of Fats and Iron: Many attempts have been made to associate the spleen with the metabolism of fats and iron. This fact has been proven and disproven and is still a much disputed function.

5. Defense Reaction: The spleen is an important antibody maker and is quite important in immunity. Further, the spleen has some unknown reactions that make it somewhat immune to invasion by tumor cells.

With these actions known, and the fact that the spleen can be removed without harmful effect to the human body, it must be assumed that the spleen is associated with other members of a system which can take over its various functions and carry

them on with a fair degree of success. This proves conclusively that the spleen is not essential to life.

From the Mayo Clinic there are reported over thirty different conditions for which the spleen has been removed deliberately. Since the first splenectomy was planned and done by Spencer Wells in 1866, much study has been given the organ, with the result that definite indications for splenectomy have been narrowed down to a few only.

It is obvious that the operation must be resorted to in cases of trauma to the spleen, such as gunshot wounds, rupture from contusions, stab wounds, and any other injury where blood is being lost. The spleen is one of the most vascular of organs and operation at once is indicated. A few cases of this type will be presented here.

CASE REPORTS

STAB WOUND OF SPLEEN

Case 1 (No. 83314)—Hillman Hospital, Surgical Section "B", Dr. D. S. Moore, Chief Surgeon. Negro woman, aged 22, admitted to the hospital at 8:50 A. M., January 7, 1934 in profound shock. History revealed that she had been stabbed about one-half hour before admission. Examination showed a negro woman, well developed and nourished. She was perspiring freely. Blood pressure was too low to record. Pulse was very fast and hardly perceptible. There was a small laceration in the tenth interspace just anterior to the posterior axillary line. Little bleeding was coming from this point. The patient was thought to have had a penetrating wound of the chest extending into the abdomen and injuring the spleen. She was taken to the operating room, given morphine, intravenous glucose and acacia, stimulants and external heat. She reacted slowly and about 1:00 P. M., with a blood pressure of 56/28, a left rectus incision was made under local anesthesia by Dr. Chalmers Moore. The abdomen was filled with blood. Gas anesthesia was then started and exploration revealed a stab wound of the spleen which was bleeding. Splenectomy was done quickly, and then a perforation of the diaphragm was closed. Abdominal wound was closed with drainage in the splenic area.

Patient was given extensive postoperative treatment of fluids by vein, under the skin and by rectum. She recovered promptly except for some wound infection and was discharged as cured on February 28, 1934.

Pathological Report: Specimen is a spleen which has a penetrating stab wound at the junction of upper and middle thirds.—Dr. Geo. Graham, Pathologist.

Comment: Here is presented a case of stab wound of the chest and abdomen with injury to

the spleen. The shock was combated first and splenectomy was done as soon as the general condition permitted. Such cases as this indicate immediate operation, with splenectomy. Repeated efforts to get suitable donors for blood transfusions in this case failed. Recovery would have been hastened if blood could have been given both before and after operation.

TRAUMATIC RUPTURE OF THE SPLEEN

Case 2 (No. 77257)—Hillman Hospital, Surgical Section "B". Negro boy, age 17, admitted to the hospital at 5:50 P. M., September 5, 1932, with history of having been in an automobile accident about one hour before admission. He was riding in a rumble seat of a car and was thrown against the front of the seat. Examination revealed small lacerations on chin, left knee, and left side of thorax. Patient was in fair condition. Pulse was of good volume and the blood pressure 110/50. He continued to complain of pain on the left side of the abdomen, and the abdomen was rigid over the entire surface, with marked tenderness over the spleen. Rbc. 2,640,000, hemoglobin 50%, wbc. 7,300. Patient was given intravenous glucose solution, and a diagnosis of a ruptured spleen was made.

An exploratory laparotomy was done under ether soon after admission, by Dr. Dan Coyle. Left paramedian incision was made. Peritoneal cavity contained much free blood. Spleen was found to be ruptured. Spleen was quickly removed and abdominal wound closed with one drain.

Patient was put back to bed and infusions of saline and glucose were given at frequent intervals. Every effort to get donors for blood transfusion was made but with no success. Patient died four days later.

Comment: This case presents a typical picture of ruptured spleen, and was treated as such by immediate splenectomy. It also shows the value of blood transfusion in these cases. We do not believe this patient would have died had we been able to provide blood for him.

TRAUMATIC RUPTURE OF THE SPLEEN (INTRACAPSULAR) WITH LATER RUPTURE

Case 3 (No. 81993)—Hillman Hospital, Surgical Section "B". White male, age 32, was admitted to the hospital on May 1, 1933 with a history of having been hit on the back of the neck by a tree while working in the woods five weeks before this admission. He said that he worked the remainder of that day, and also had worked since, but that his neck had remained sore. Examination revealed some limitation of motion of neck and some tenderness over the lower cervical spines. X-ray revealed fractured spinous processes of 3rd, 4th, and 5th cervical vertebrae. At this time his blood count was: rbc. 4,560,000, hemoglobin 90%, wbc. 6,950. Patient was discharged two days later with instruction to remain in bed for several weeks.

On September 12, 1933 (4½ months after first seen), the patient returned to the hospital complaining of pain in the abdomen of twenty-four

hours' duration. He said that at first a sharp pain hit the tip of his left shoulder and then seemed to radiate down to the abdomen and remained in the right lower quadrant. He vomited several times, and his bowels moved regularly. Since onset he had been quite weak and thirsty. Examination revealed patient acutely ill, pulse fast and volume weak. Blood pressure was 114/70. Abdominal examination revealed marked rigidity over entire surface, but more marked on the right than on the left. There was some tenderness over the entire abdomen but more marked in the right lower quadrant. Temperature 100.2; wbc. 8,450 with 73% neutrophils; hemoglobin 50%; rbc. 3,010,000. A diagnosis of appendicitis was made and operation performed by Dr. Ralph Morgan. A McBurney incision was made, and the appendix, which was slightly injected, was removed. During this procedure blood began to come down from the upper abdomen, and the incision was closed quickly. A high rectus and transverse incision was made. The spleen was found to be large and bleeding. A large clot was removed from a tear in the splenic capsule and splenectomy was done and abdomen closed. Patient was given several transfusions, and recovery was uneventful except for secondary closure of the wound.

Pathological Report: Specimen is a spleen, measuring 17.5x13.5x4.5 cm. and weighing 573 gms. The anterior surface presented two capsular tears, 3.5 and 4 cm. long, each near opposite poles. Beneath the capsule can be seen many cord-like markings representing thrombosed blood vessels and near the center of the surface there is a large subcapsular hemorrhage. The opposite flat surface of the spleen is extensively torn, almost the entire capsular covering being absent. The parenchymal tissue is deeply torn, and the whole surface is a series of irregularly projecting ragged masses of splenic pulp with many large and small blood clots.

With the spleen there is a flattened mass of firm blood clot evidently in an early stage of organization. It is 15.5 cm. long and 10.5 cm. wide and 2 cm. in greatest thickness. The size and shape suggest that it originally formed a covering over the torn splenic surface. In the ruptured tissue of the spleen there are clots molded into blood vessels.—Dr. Geo. Graham, Pathologist.

Comment: This patient had an injury to the neck and abdomen about the last of March 1933. He was seen five weeks later with fractures of the cervical spines, but no abdominal symptoms. Received no injury between that time and time of readmission 4½ months later. Presented symptoms of an appendicitis but also pain of the left shoulder. Hemoglobin had decreased during this period from 90% to 50% and rbc. from 4,560,000 to 3,010,000. Spleen showed intracapsular rupture which probably occurred at the time of the accident and complete rupture at the time of admission. This case also shows the value of repeated transfusion in splenic cases and the value of immediate splenectomy.

These first three cases illustrate thoroughly the indication for splenectomy in

traumatic injuries of the spleen. They also illustrate the value of repeated transfusions and other postoperative care. There can be no argument about the value of surgery in these types of cases.

Diseases of the spleen present quite a different picture. There are certain definite indications, and there are many very indefinite indications for the surgical removal of the spleen in diseased conditions. A few of the most common will be discussed at this time.

Hemolytic Acholuric Jaundice With Splenomegaly: Most writers agree that the only hope for this condition lies in splenectomy at the proper time. This chronic disease, which is primarily due to increased destruction of blood cells and characterized by anemia, increased fragility of erythrocytes, acholuric icterus and splenomegaly, is quite common. It also runs a course of exacerbation and relapse, and during the quiescent period splenectomy should be done. This case will illustrate the condition and results obtained.

HEMOLYTIC ACHOLURIC JAUNDICE WITH SPLENOMEGALY

Case A (No. 73388)—Hillman Hospital, Medical and Surgical Division "A", Dr. J. S. McLester, Chief Physician; Dr. J. M. Mason, Chief Surgeon. White boy, age 13, was admitted to the hospital on February 25, 1932 in coma. He appeared well nourished, but very anemic. Hemoglobin was below 20% and rbc. 530,000. A transfusion was given at once using 320 cc. of whole blood before any attempt to diagnose the condition was made. The boy reacted on the table, and became much better. The history was then obtained of enlargement of the abdomen over a period of more than seven years, but with apparently no ill effects except weakness. He became unconscious only a few hours before admission. Physical examination revealed an anemic boy of about normal size for his age. Heart was enlarged both to the right and left, the apex being in the fifth interspace in the anterior axillary line. There was a presystolic and systolic murmur over the entire precordial area. Lungs showed a little fibrosis over upper areas, and dullness over the bases was higher than normal. The liver was palpable four-fingerbreadths below the costal margin with a smooth and regular border. The spleen was also enlarged. The upper border was just below the heart, and probably pushed the heart upward. The junction of the enlarged heart, spleen, and liver completely obliterated Traube's space. Downward the spleen extended below the umbilicus and the crest of the ilium. The outline was regular and the organ was tender. Laboratory findings were as follows:

Blood—Hgb. 20%
 Rbc. 530,000
 Wbc. 5,450
 Platelet count 210,000
 Coag. time, 4 min.
 Bleeding time 5 min.
 Wassermann 3+
 Urine—Negative
 Feces—Negative
 Gastric Analysis—Total acid 18°
 Free hcl. 0°
 Blood, Negative

This patient was kept in bed and given six transfusions at intervals. He was also given liver extract and high liver diet. He progressed nicely and on April 27, 1932 his hemoglobin was 28% and rbc. 1,890,000. The fragility test was within normal limits. A second Wassermann was run on the patient, and a Wassermann on both parents was taken; all three were negative. The patient was discharged with instructions as to diet and liver extract, and to return for observation.

This boy was brought back to the hospital about one month later and another transfusion was given. He was kept in bed in the hospital for two weeks, and at the end of that time his blood count was practically the same as on discharge before. On March 3, 1933 the patient was readmitted complaining of dyspnea on exertion. Examination was about the same as when first seen, but his hemoglobin and red blood count were much higher. During this admission antianemic therapy was given, and his blood count increased to hemoglobin 36%, rbc. 1,960,000. At this time thorium dioxide (thoratrast) was given intravenously and a beautiful picture of the enlarged liver and spleen was shown. Splenectomy was advised, but this was refused by the parents of the child. Patient returned two weeks later in a dyspneic condition. Hemoglobin was below 20% again. A transfusion was given in addition to other antianemic therapy and on June 28, 1933 his hemoglobin was 44% and rbc. 2,800,000. A splenectomy was done under gas anesthesia by Dr. Joe Donald. After a stormy period, for a few days following operation, the patient recovered promptly and left the hospital July 26, 1933 with a hemoglobin of 50%, and rbc. 3,000,000. He has been seen several times since and his general condition is excellent; however, he has developed some slight degree of epilepsy.

Pathological Report: Specimen consists of a spleen weighing 1,088 gms. It measured 26x13x5.5 cm. The surface showed numerous depressed scars producing lobulations of the parenchyma. The scarred areas sometimes reach a width of 2 cm. and form depressed areas of firm opaque yellowish gray tissue from which narrow scars radiate. Adherent over some of the scarred areas were fragments of omental fat. The scarring was absent on the posterior surface except at the margin. The posterior surface does, however, show several deep pits, and in them were vessels evidently representing accessory blood supply. No well developed hilus was found. The largest blood

vessels seemed to enter the spleen at two places near one margin on the posterior surface, and were separated by an interval of 10 cm. The parenchyma was soft and dark red. The capsule was unusually thick. The corpuscles were unusually large and distinct. They consist of a pearly white homogeneous tissue. The surface scars were underlain by dense scar tissue, sometimes containing yellow pigment.

Microscopic: Sinuses are dilated and filled with red blood cells. Many red cells are also present in the pulp cords. Endothelial cells lining the sinuses contain more or less deposits of hemosiderin. Hemosiderin occurs also in phagocytic cells of pulp. A few leukocytes are scattered through the pulp and sometimes lie in sinuses. They are usually mononucleated, but a rare neutrophil is present. Malpighian corpuscles are rather large and prominent.—Dr. Geo. Graham, Pathologist.

Comment: This is a typical case of hemolytic jaundice with anemia, jaundice, exacerbation, and, finally, relief by splenectomy. This case also shows the value of operating at the first favorable opportunity rather than risking another exacerbation, as happened in this case, because of refusal of consent by parents for operation when first suggested.

Thrombocytopenic Purpura or Thrombopenic Purpura: The next most common disease in which splenectomy is indicated is thrombocytopenic purpura. This condition is acute or chronic and is characterized by a marked decrease in the blood platelets, spontaneous hemorrhages from the mucous membranes, and purpura. Washburn reports cases in the literature up to 150 in 1928. Seventy per cent of children and 60% of adults had good results following splenectomy; 16.8% of children and 13.3% of adults were improved greatly; 4.2% of children and 7.7% of adults showed some slight improvement. Of this series 8.3% of the children died and 18.8% of adults died. The review shows that splenectomy is certainly indicated in this condition. We have none of these cases to report, but did have under observation a case of this type who left the hospital before operation was performed.

Banti's Disease (Splenic Anemia): Probably the most common of the splenic diseases is Banti's disease. This condition is a chronic disease of unknown origin, characterized by splenomegaly, anemia, leukopenia, a tendency to gastric hemorrhages, increased function and destruction of blood cells, and later by cirrhotic changes in the liver, with ascites and jaundice.

There is some discussion as to the value of splenectomy in this condition, but it is of an undoubted value when done in the early stages before ascites and jaundice appear. A case of this type is as follows:

BANTI'S DISEASE

Case 5 (No. 72837)—Hillman Hospital, Medical Division "A", Surgical Division "B". White female, age 31, admitted to the hospital January 22, 1932 complaining of pain and swelling in the left side of her abdomen of one months' duration. Patient went to bed with a slight upper respiratory infection, and while in bed noticed sticking pains with fullness in the upper left abdomen. This enlargement of the abdomen continued, and she went to a physician who told her that her spleen was enlarged. Past history was negative except for laparotomy for ovarian cystectomy and appendectomy ten years before. Examination revealed a well developed young woman, not in acute distress. All examination was negative except for the abdomen. Abdomen revealed lower midline incision. There was a hard, regular, smooth mass which extended from under the left costal margin to the iliac crest and anteriorly to the umbilicus. Liver was not palpable. Some slight amount of free fluid was made out in the abdomen. On admission the laboratory report was:

Blood—Hgb. 59%
Rbc. 3,660,000
Wbc. 4,150
Platelets 120,000
Urine—Negative
X-ray Report: Gastro-intestinal series negative for pathology.

This blood picture continued about the same daily until she was transfused on February 20, 1932. On February 24, with a hemoglobin of 61% and a rbc. of 3,150,000, a laparotomy was done. The spleen was found to be markedly enlarged, and splenectomy was performed by Dr. Frank Wilson. The liver was found to be very small and cirrhotic, and there was also some free fluid in the abdominal cavity.

Pathological Report: Specimen consists of a spleen weighing 709 gms. It was mahogany red, moderately firm with a light doughy consistency. It measured 19x13x7 cm. The cut surface reveals a rich beef red color. It is smooth and rubbery, and little material adheres to the knife on scraping. The surface is mottled with occasional vague light points, possibly representing corpuscles. The fibrous septa are relatively few, widespread and of small size. There are occasional minute hemorrhages and a few coarser hemorrhages. There is a rare pinpoint, firm, yellowish nodule slightly projecting above the cut surface and sometimes surrounded by a slight halo.

Microscopic: There is a generalized fibrosis so that the pulp cords stand out as cords of rigid appearance sharply outlining the sinuses. Frequent fusiform nuclei are present in them, but there are

also a fair number of lymphocytes, splenic cells, rare neutrophils and eosinophils. The sinuses usually contain only a few blood cells and leukocytes. The splenic corpuscles are unchanged.—Dr. Geo. Graham, Pathologist.

This patient was discharged on March 17, 1932 with a hemoglobin of 60% and a rbc. of 3,810,000. Since leaving the hospital the patient was operated on at another hospital, a hysterectomy being done. Except for this she was apparently in good health. On December 3, 1933, nearly two years after splenectomy, the patient returned to the hospital with a history of vomiting blood for six weeks. Her rbc. was 3,120,000 and her hemoglobin 54%. She had one hemorrhage after admission. She was transfused and recovered rapidly. This hemorrhage was thought to be only a part of a Banti's syndrome but repeated gastro-intestinal studies showed a penetrating gastric ulcer high up on the lesser curvature of the stomach. On Sippy diet she has improved remarkably, and probably will not have to come to surgery for this condition.

Comment: Here is a woman, who, before realizing it, developed Banti's disease in the third stage without any symptoms except for one month prior to admission. Splenectomy has relieved her for two years, and has kept her blood picture at a stationary level. A gastric ulcer for which she returned to the hospital is a separate and distinct condition from the Banti's disease.

Since operation was not performed until the spleen was enlarged and cirrhosis of the liver with ascites had occurred, the prognosis is not so bright. If this patient could have been operated on earlier her chances for recovery would have been good.

We have several other cases of this disease which have been relieved for some time by splenectomy, but unfortunately, most of our cases are gotten in the third stage when recovery is not the rule.

Sickle Cell Anemia: Another disease which has come into importance in the last few years, especially in the South, is sickle cell anemia. This disease, which has been described by many writers, is becoming recognized more and more each year. It occurs always in negroes and is probably familial in character. It is characterized by reduction in the number of erythrocytes in the blood and by the appearance of sickle-shaped red cells. A good percentage of healthy negroes have sickle-shaped cells in their blood streams, but all are not anemic. It seems best, as suggested by one writer, to call this condition sickleemia and leave the term sickle cell anemia for the advanced cases where anemia is present. The usual case has a rbc. of about 2,500,000, with a color index slightly under one and

a slight leucocytosis. In addition to finding the sickle cells, nucleated red cells and other anemic changes may be found. Sometimes sickle-shaped cells will not be found until the blood is allowed to stand some time.

Several cases of this condition, where splenectomy has been done with improvement, have been reported in the literature. The spleen in these cases has varied from very small to quite large. All the cases have been benefited by splenectomy. As time goes on, and more is learned about this condition, we feel that it will become a common indication for this surgical procedure. A case of this type is as follows:

SICKLE CELL ANEMIA

Case 6 (No. 82607)—Hillman Hospital, Medical Division "A", Surgical Division "A". A negro boy, age 13, was admitted to the hospital on May 21, 1933 complaining of a mass in the left side of eight years' duration, weakness for two years and bleeding from the nose and gums at times. The mass in the abdomen, which the patient had noticed for eight years, has never bothered him much. He went to school, and played normally until two years ago. At that time he began to get weak while playing and had to restrict his activities. He has bled from his nose and gums on several different occasions. Past history is negative. Examination revealed a slightly undernourished negro of normal size for age. Sclera were slightly jaundiced; the gums anemic. The mucosa of the nose was blood stained. The lungs were normal throughout. The heart revealed a soft blowing systolic murmur at the apex. There was a firm smooth mass in the left side of the abdomen which filled this whole side from costal margin to crest of ilium. The liver was not palpable.

Laboratory findings were:

Hgb. 20%
Rbc. 1,440,000
Color index 0.7
Wassermann—negative
Sickle cells
Nucleated red cells and achromian
Wbc. 5,550

The patient was kept in the hospital on liver diet and prescriptions of iron and copper. On June 30, 1933 he went home greatly improved. On June 27, 1933, after giving 25 cc. of thoratrast (thorium dioxide) for three days, abdominal x-rays were taken, and the outline of a very large spleen and normal size liver was seen. It was the consensus of opinion that this was a case of Gaucher's or sickle cell anemia.

The boy returned to the hospital on July 12, 1933 with the same symptoms. At this time his blood count was practically the same as on first admission. Liver function tests were normal. During this admission four transfusions were given with

marked improvement of the patient. September 14, 1933, with a hemoglobin of 35% and a rbc. of 2,570,000, splenectomy was done under gas anesthesia by Dr. Mason. This patient made an uneventful recovery and was discharged October 6, 1933 with hemoglobin 28% and a rbc. of 3,380,000. He has been seen several times since and is in good health.

Pathological Report: Specimen consists of a spleen, 22x14 cm. and weighing 1,080 gms. It was somewhat soft and was a bluish grey color. There was some indentation and scarring of the surface. On section the capsule was found to be about 2 mm. thick. The cut surface was a deep red brown with some nodules of homogenous substance. The fibrous trabeculae were not very definite. The malpighian corpuscles were somewhat obscured.

Microscopic: Malpighian corpuscles often surrounded with engorged capillaries. Scattered through the parenchyma there are large areas of dense scar tissue containing heavy incrustations of iron-containing pigment. About them there are occasional giant cells containing cords somewhat suggesting mycelia threads. These are also incrustated with pigment. The blood content of the parenchyma varies, and in some areas there is almost complete submergence of parenchyma framework, while in other areas there is fibrosis of pulp and relatively little blood content. In formalin-fixed tissue the red cells show sickling deformity.—Dr. Geo. Graham, Pathologist.

Comment: Here is presented a case of sickle cell anemia with good results following splenectomy. This case also shows the value of thorium dioxide in diagnosing liver and splenic enlargement, but it must be used with discretion and not as a general routine.

This condition is becoming more prominent and there will probably be many more cases reported in which splenectomy has been done.

Gaucher's Disease (Large Cell Splenomegaly): The fourth disease in which improvement may be expected following splenectomy is the condition known as Gaucher's disease. This is a condition characterized by chronic anemia and a marked splenomegaly due to the peculiar large vesicular cells which are also found in other parts of the hematopoietic system. The etiology of this condition is not known, as is the fact in all splenic conditions. The disease is very insidious in onset and runs a very chronic course. The enlarged spleen is usually the first noticeable symptom. The symptoms of anemia may precede this finding. The following case illustrates the condition:

GAUCHER'S DISEASE

Case 7 (No. 80711)—Hillman Hospital, Medical and Surgical Division "A". White woman, age 55, admitted to the hospital February 27, 1933 with

chief complaint of vomiting for the past year, some enlargement of the abdomen, and weakness. Past history was negative except for removal of a polyp from the cervix in 1918. The vomiting usually appeared after eating and all foods gave the same symptoms. Her abdomen had been enlarged somewhat for the past year but no definite mass had been noticed. For some time she had been quite weak and tired easily.

Physical examination revealed a woman of 55 years, well developed and nourished. The remainder of the examination was negative except for some indefinite fullness in the upper left quadrant with slight tenderness over this area. Gastrointestinal series revealed a deformity at the junction of the upper and middle thirds of the stomach. This was repeated and the same deformity was noted but after repeated visualizations it was decided that this deformity was due to pressure from without, probably from an enlarged spleen. Laboratory findings were as follows:

Blood—Hgb. 50%
Rbc. 3,510,000
Wbc. 7,000
Wassermann—negative
Urine—Negative
Feces—Negative
Gastric Analysis—Total acidity 40°
Free hcl. 25°

A diagnosis of splenomegaly with mechanical interference to the stomach was made and after some preoperative treatment, which improved her general condition, operation was performed by Dr. Thos. Purser. At the operation the liver was found to be enlarged and the spleen, also enlarged, was lying over on the stomach. Splenectomy was done.

The patient made an uneventful recovery, and she was discharged from the hospital in good condition with hgb. of 70% and a rbc. of 4,070,000. Since that time she has been seen in the clinic and is apparently cured.

Pathological Report: Specimen consisted of a spleen 13.5x9.5x3.8 cm., weighing 250 gms. The consistency was firm and elastic. Cut surface was smooth, light red with greyish tone. Little pulp adhered to the knife on scraping. The corpuscles were not very distinct.

Microscopic: There is generalized infiltration by a few mononuclear and polymorphonuclear leucocytes and a fine fibrosis. The sinuses contain many large mononucleated cells with granular and vacuolated cytoplasm. They suggest the cells found in Gaucher's splenomegaly, but are somewhat like endothelial leucocytes.—Dr. Graham, Pathologist.

Comment: This is a case of Gaucher's disease which occurred in an elderly woman. Her only symptoms were of a mechanical nature due to the enlarged spleen pressing on the stomach and to the anemia. She has been relieved by splenectomy.

Other Diseases: Splenectomy is sometimes indicated in Glenard's disease (general enteroptosis) when the spleen gives

symptoms because of its position and congestion. In tropical countries the spleen sometimes has to be removed for chronic malaria, because of its large size. Tumors and cysts of the spleen are rare and are only diagnosed after the spleen has been removed.

SUMMARY

The spleen has been, and still is, an organ about which all is not known. It is known that it is not necessary for life, and that it must be removed in certain conditions or diseases in which the organ plays some part.

As shown in the first three cases herein reported, the spleen must be removed deliberately and quickly whenever there is an injury to it and blood is being lost. It is almost impossible to suture a wounded spleen and the simple removal is comparatively simple and safe.

The most important thing in connection with these types of cases is to recognize the fact that the spleen is injured and needs immediate attention, and that conservative treatment will not stop hemorrhage. The mortality for simple splenic injuries is too high, and can be lowered considerably by correct diagnosis and prompt treatment.

There is no clear cut rule for the removal of the spleen in diseased conditions. Every case must be individualized and treated accordingly. It is safe to say at this time that hemolytic jaundice, thrombocytopenic purpura, Banti's disease, sickle cell anemia and Gaucher's disease respond remarkably well following splenectomy and that every case, if the general condition permits, should be given the benefit of this surgical procedure.

In all conditions of the spleen there is some form of blood dyscrasia, varying from secondary anemic changes to anemias simulating the primary pictures. For this reason, the routine use of blood transfusions in preparing these patients for operation and its use postoperatively, if needed, is to be recommended.

CONCLUSION

It is sincerely hoped that this brief discussion and presentation of typical cases of splenic conditions which have been benefited by splenectomy will stimulate all of

us to be more alert in diagnosing cases of this type and giving them the benefit of surgery.

DISCUSSION

Dr. J. M. Mason (Birmingham): I want to congratulate Dr. Collier on the splendid arrangement and presentation of his material and on the excellent results which have been obtained in the series of cases which he has presented. He has gone rather fully into the indications for splenectomy in diseased conditions, so I would like to confine my remarks to a consideration of certain anatomical features in the left upper abdomen right under the dome of the diaphragm.

In addition to the spleen, we have in this location the splenic flexure of the colon, the fundus of the stomach, the tail of the pancreas, and, in addition, in many cases, the upper lobe of the liver. Any injury which results in the rupture of the spleen is liable to involve any one of these organs, so, in opening the abdomen for splenectomy, examination must be made of these organs and the appropriate treatment should be instituted if they are injured.

I would like to present a slide giving you an example of how high the splenic flexure of the colon ascends. It goes up as high, in the rear, as the eleventh rib, and in front to a point that corresponds to about the eighth rib. This is an autopsy specimen recently obtained from a patient admitted to the Hillman Hospital, a little girl run over and knocked down by an automobile. She had a rupture of the spleen and a rupture of the kidney. She was not operated on and died a few hours after being admitted.

In uncomplicated rupture of the spleen, hemorrhage is the main feature to be controlled, and the effect of hemorrhage is the main factor to be combated. As Dr. Collier has stated, splenectomy is the only practical method of controlling the hemorrhage from a badly lacerated spleen, and transfusion is always indicated in combating the effects of hemorrhage from this source.

Autotransfusion has been successfully employed in hemorrhage from ruptured ectopic pregnancy, and can be used with equally satisfactory result in ruptured spleen, provided the blood has not been contaminated by the escape of fluids from other injured viscera, such as the intestinal and urinary tracts.

Since autotransfusion has not been extensively employed in hemorrhage from ruptured spleen, I shall report a case in which this proved of very great value. The case shows, also, so many other interesting features that a detailed report will give one some idea of the difficulties which may be encountered in gunshot or stab wound of the spleen.

Colored female, aged 20, was admitted to St. Vincent's Hospital on August 1, 1933, one-half hour after being shot in the left chest, at close range, by a 32 calibre pistol bullet.

The body was perforated, the wound of entrance being to the left of the sternum at the level of the 8th rib which was fractured; the exit was at the

centre of the 12th rib, which was also fractured. She was in profound shock. X-rays showed both the fractured ribs, but there was no evidence of hemothorax or collapse of the lung. The course of the bullet, together with the marked evidence of hemorrhage, which was definitely not in the pleural cavity, caused us to suspect that the abdomen had been entered and that the hemorrhage was probably from a ruptured spleen. We were fortunate in having donors available and transfusion was carried out at once. This resulted in marked improvement and the exploration was carried out.

The spleen was extensively lacerated and was quickly removed. A large quantity of blood was present in the abdominal cavity and this was removed under aseptic precautions and preserved for possible autotransfusion.

Complicating injuries were then sought for and it was found that the diaphragm had been perforated on its posterior aspect, just above the point where the 12th rib had been fractured. The course of the bullet had been as follows: In front it had fractured the 8th rib, and had entered the abdomen, lacerated the spleen, but had not, up to this time, entered the pleural cavity. After passing through the spleen, it had perforated the diaphragm and opened the pleural cavity as it emerged from the body. Access of air from the open abdomen resulted in collapse of the left lung, a condition which had not existed until the abdomen was opened.

No other injuries were found, so we felt safe in using the blood which had been collected from the abdomen for the purpose of autotransfusion. Coming at the end of an operation which was very taxing, the autotransfusion resulted in immediate improvement, and we feel that it was a material help in the successful outcome.

Following operation, the condition of the abdomen gave no material concern, but the chest wound was followed by hemothorax, and later by empyema. On August 30, rib resection and drainage of the empyema cavity was followed by complete recovery.

Dr. Lloyd Noland (Fairfield): I have been greatly interested in Dr. Collier's paper, which I think most timely.

My surgical work was started in the tropics many years ago and there I had the opportunity of seeing a number of spleen accidents, so if I may be permitted to do so, I will discuss the traumatic side of the question.

In these countries no injuries are more common than those to the spleen. The first case of this sort that I remember was the result of a fight between the mate of a vessel and a stevedore. The stevedore struck the mate with a piece of rattan three or four feet long on the left side. Within a few moments the mate, who was a tremendously powerful man, died. At autopsy an enormous spleen, completely ruptured, was found.

I believe that spontaneous rupture of the malarial spleen is not uncommon. Several years ago I reported ten or twelve cases of this accident.

Space will not permit a discussion of the whole subject of splenectomy, but in my opinion the op-

eration is not performed frequently enough, for it is a simple operation in most cases and in many instances can be performed with a local anesthesia. Certainly in the cases described by Dr. Collier the operation was timely.

Dr. Collier (In closing): I should like to say that all these cases are reported from the Hillman Hospital, the entire surgical staff of which is to be congratulated on the results attained.

MANAGEMENT OF VARICOSE VEINS AND ULCERS*

By
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This will not be an attempt to discuss exhaustively either the etiology or treatment of varicose veins and ulcers but rather to recount our way of attacking the two conditions.

Large, hard, tortuous, and sometimes almost sacculated, veins; edematous ankle and foot made worse by standing; pain, and a history of long hours of standing while at work; often a history of phlebitis following childbirth, typhoid, pneumonia or surgery; these make up a picture not often difficult to diagnose as varicose veins.

Now, if a patient has varicosities, what have we to offer him in the way of relief? No doubt it is almost universally accepted that injection of sclerosing agents is preferable to surgery. The procedure is less painful than surgery, is not disabling (thus saving the patient the inconvenience and expense of hospital confinement), no anesthetic is required and may be instituted in one's office. It is also less dangerous than surgery when properly carried out and used only where indicated.

Perhaps there are those who do not favor the injection treatment of varicosities and advance the argument that the injection does not always obliterate the vein; that there are occasional sloughs. As for failure and recurrence, we can promise the patient that, even if treatment must be repeated, he still has suffered less pain, inconvenience and expense than if surgery had been resorted to.

It is by no means safe or advisable to inject all varicose veins. Two very important questions must first be answered: Is

there any infection at the site to be injected either in the overlying tissues or in the vein; or will infection probably reach the injected area from some remote focus in the body? The injection wounds the intima of the vein and if there be even a mild phlebitis present, or if the blood stream is carrying infective organisms, a suitable situation for renewed activity is created. As a consequence there may be a severe local reaction with great pain, redness and swelling, even sloughs; or the infection may cause a severe phlebitis in a vein that has probably already been damaged by a previous infection. One case of phlebitis is very discouraging to both patient and physician. The danger of it, I think, can be brought to a minimum by a carefully taken history and complete physical examination to rule out the presence of infection or the likelihood of one after the injection.

The second important question to be answered is, does the venous return have available some channel other than the crippled veins we anticipate obliterating by injection? Regardless of how poor the return circulation may be in the superficial veins, if it is the only route available for the blood to get back to the heart, then by all means it should not be destroyed but preserved. Further, it should be aided by mechanical support, such as an elastic stocking or an ace bandage.

It is my custom to examine the venous system of a varicose leg somewhat along the following lines: The patient is placed in a recumbent position on the examining table. The leg is elevated and the veins stripped free of their excess blood by gentle massage toward the body. Then the patient stands up and the rapidity with which the varicosities fill is noted. If they fill suddenly we interpret this to mean that there is a back flow of blood, either through a communication with the deep veins or down the long saphenous, which is so dilated that its valves no longer function. If they fill gradually there is no great back pressure through either system. Next, pressure is made directly over the upper part of the saphenous, after the veins have been freed of excess blood as described above. Now there can be no backward flow of blood in the saphenous, nor is there any return of blood to the general circula-

*Read at a meeting of the Etowah County Medical Society, June 19, 1934.

tion through it. This time we note the rapidity of filling and the degree of distension. Sudden filling means there is backward pressure from the deep veins, also free communication between the two systems. Moderate distension means that the deep system is fairly competent to take the whole load. Overdistension, and here the patient would have pain, means it is incapable of the task, and the superficial system of veins should not be destroyed. A gradual refilling of the varicosities during this test can mean either of two things: 1. That the deep veins are capable and are taking care of the situation adequately; 2. That if not competent there is poor communication between superficial and deep veins and so the back pressure is slow showing up. This latter is one of the most unfavorable of all conditions under which to inject.

One other test is given: A tourniquet is placed around the lower thigh just tight enough to obstruct venous return in the superficial system and the patient is allowed to walk about the room for several minutes. With the leg thus dependent and patient exercising we put the final test of efficiency on the one system of deep veins. When there is little discomfort, no pain or cramps and no marked distension of varices, the deep veins are furnishing sufficient venous return and the varicose ones should be injected.

If there is pain and great distension, beyond the usual size of the varicosities, with marked discoloration of the skin, then there is an obstruction to circulation through a failure of the venous blood to find a channel for return. The conclusion is, therefore, not to inject but to keep the superficial veins even though varicose.

If the first test mentioned in the paper shows marked back pressure of blood, and the other tests convince us it is from the long saphenous, then I think there is some advantage in ligating it high up on the thigh. This would eliminate most of the pressure and, as some claim, the actual downward flow of blood through this vein. The danger of systemic effect from the drug to be injected is reduced, and parts of the veins are obliterated by the blood as it becomes organized in it.

Many solutions are being used for the

treatment of varicose veins, which is, within itself, proof sufficient that none is entirely satisfactory. I have used only two of these, namely, sodium morrhuate, and quinine and urethane—both put up by Parke, Davis and Co. There have been no unhappy results from either. Quinine and urethane solution is probably less painful and just as effective as sodium morrhuate. It is our practice to have the patient sit on the end of the table with foot dependent and resting on a small stool. The skin is prepared with alcohol. A small needle is used and the injection made directly into the lower part of the varix. The needle being in the vein lumen, pressure is made just below its point by the thumb of the left hand and just above by the index finger. Now, if the finger is moved firmly upward, the vein is flattened and the capacity of the venous segment to be injected is markedly diminished, so that a smaller amount of solution can be injected and still come in contact with the whole intima, the amount varying from 3 or 4 minims to 1 cc. The needle is withdrawn whereupon the thumb and finger are held in position for two minutes, this being ample time to produce the necessary irritation to the vein lining. This pressure also allows a gradual escape of the fluid into the general circulation. A small compress is placed over the injected site. Two or three injections to each leg are made at a sitting. The patient wears an ace bandage and reports in one week for further injections. This method has the following advantages: 1. The small amount of fluid injected minimizes systemic effects from the solution; 2. Compression makes for more complete obliteration; 3. The support reduces pain and swelling and guards against sloughs.

The support should be worn for a month or two after the injections are completed. During this period the new route for venous return takes on increased capacity by dilatation, after which no support is needed and the patient should be practically as comfortable as before he had his varicose veins.

Varicose ulcers constitute a part of the title of this paper in as much as they are often the result of long standing varicose veins. Brief reference to them permits me to commend to you their treatment with

the Unna paste boot. The boot is applicable to those ulcers that do not carry active infection but are in a latent stage or stage of repair. Ingredients of the paste best suited to our climate are as follows: glycerine, 12 oz.; gelatin, 4 oz.; zinc oxide, 2 oz.; water, 16 oz.

The boot should be applied early in the morning, for after a night's rest the leg is more nearly its normal size than at any other time of the day. The patient remains in bed until time to report to his physician's office. Upon arrival there he again lies down, with the foot elevated, while the materials are gotten ready and the paste liquified by warming in a water bath. The leg is shaved and bathed. An assistant then supports it from the toes, and the foot and leg from base of toes to just below the knee are covered with liquid paste, application being made with a paint brush. Nothing is put next to the ulcer; it is painted just as the rest of the leg. Next, a layer of 3-inch bandage is wound around the foot and leg. It must be applied smoothly without reversing and without constrictions. Cut the bandage and start anew when it no longer lays flat on the surface in the process of winding around the calf and ankle.

Four layers of paste and three of bandage are thus applied. It will take about an hour and a half for this to set or congeal. During this the patient remains in the recumbent position with foot elevated. If properly applied we now have a snug, smooth, even fitting, semisolid boot from toes to knee. It readily changes shape to conform to the ankle and calf in walking but does not wrinkle or *stretch*.

The primary cause of varicose ulcer, as you know, is poor circulation. Congestion from failing venous flow is so great that arterial blood no longer reaches the parts in sufficient quantity to maintain life. As a result there is death and sloughing of tissue. An Unna paste boot is a purely mechanical device giving the same support to the return blood flow that was once given by the vein walls before they were weakened and dilated. It is put on when there is no swelling and it is impossible for the leg to swell while it is on. The cause of ulceration is therefore eliminated. Renewed arterial circulation is established and healing is the natural result. Most of

the profuse discharge from these ulcers is a pouring out of tissue fluids because of internal pressure, plus necrotic cells. A well fitting boot balances the pressure and stops necrosis. As a result, it is surprising how the discharge decreases in amount. What discharge there is comes directly through the boot and is easily taken care of by a piece of gauze applied daily by the patient.

One of these boots can be worn 4 to 6 weeks, depending on whether it is kept clean or worn through from walking. When removed there will be a fresh clean granulating wound with a rim of newly grown tissue. There will be no discharge on the skin surrounding the ulcer; instead it will be clean, dry and crusted. At this time any varicosities can be injected and a new boot applied.

One of the greatest things about the treatment as outlined is that the patient is relieved of his disability at the beginning of the treatment instead of at its completion. He is not disabled by it but instead is made comfortable and permitted to lead a more active life while he is being cured. This is a thing for which the patient is grateful.

The case reports, which follow, will serve to show something of the value of the treatment:

CASE REPORTS

Case 1.—J. M., colored male, age 70, a cook. History of hard work, great exposure and excessive drinking. Patient poorly preserved and evidence of failing circulation. Blood pressure 90/70. Right leg enormously swollen; moderate varicose veins. Two ulcers at middle of the leg; one on the anterior surface roughly 2 inches in diameter, and one on the lateral surface 3 inches in diameter. Ulcers present for over 4 years. Supportive treatment given general circulation and Unna paste boot applied to the leg. This was changed about every 3 weeks in this case for the sake of cleanliness. In all 4 boots were put on. Treatment was begun in November 1933. Patient was dismissed with wounds healed on January 15, 1934.

Case 2.—J. H. H., a white man, 21 years old, a laborer. Marked varicosities. History of a blow on the leg at an industrial plant 5½ years ago causing a leg sore that would not heal. Patient was paid compensation for several months, was hospitalized in 2 cities with improvement but grew worse after his return home each time. Examination showed an oval shaped ulcer about 1½ by 2 inches in size which was thought to persist because of the varicose veins. An injection of the veins was made and a boot applied. When he returned

for the second treatment there had been a gain of 6 lbs. in weight. The patient was very grateful for relief from pain. He was again able to work the full day and slept comfortably. Three such treatments were given. The ulcer was healed in 9 weeks but 3 additional injections were necessary for the veins.

BICHLORIDE OF MERCURY POISONING*

REPORT OF RECOVERED CASE

By
GROESBECK WALSH, M. D., F. A. C. P.
and
COURTNEY S. STICKLEY, B. S., M. D.
Fairfield, Alabama

J. M. J., a full-blooded Negro girl, age 18 years, Case No. 82852, was admitted to the Employees' Hospital on March 10, 1934, with the following history:

She had suffered for some time from leucorrhea. About 10:30 on the morning of admission—under the advice of a friend—she inserted two bichloride of mercury tablets into the vagina. About ten minutes later when pain began she used two syringes of water as a douche. Some hours later she called a physician, who sent her to the hospital. She was admitted at 4:50 P. M. Her principal symptom at that time was intense vaginal burning. Douches were given immediately after entrance to the hospital, and a portion of one tablet still undissolved came away in some of the solution. The tablets were ascertained to contain $7\frac{1}{2}$ grains of bichloride of mercury each.

During her stay in the hospital she suffered from all the classical symptoms of bichloride of mercury poisoning: anuria, edema, salivation, diarrhea, and hemorrhage. At the time of her discharge, 5-7-34, she was still suffering from a necrotic process in her lower jaw, this being the only disability on the date of her discharge.

Her treatment may be summarized as follows:

Between 3-12-34 and 3-23-34, 7700 ccs. of 5% glucose in saline, by hypodermoclysis. Between 3-12-34 and 3-22-34, 550 ccs. of 50% glucose, by vein.

Phlebotomy was done on 3-17-34, and 600 ccs. of blood removed.

*From the Medical Section of the Employees' Hospital.

Other therapeutic measures included:

40 ccs. whole blood, by buttocks.

4 oz. ceanothin and 4 ampules of fibrogen.

10 ccs. of calcium gluconate, by buttocks.

60 grams calcium lactate, by mouth.

On the first, third, fourth, and fifth days after admission, 1 gm. sodium thiosulphate, intravenously, daily.

From 3-12-34 to 4-4-34, sodium bicarbonate and sodium citrate, 15 grains of each three times a day.

From 3-14-34 to 3-30-34, Imperial drink, 2 gals. $\frac{3}{4}$ oz. honey, t. i. d., with meals.

From 3-10-34 to 4-5-34, forced sweet fruit juices.

From 4-5-34 to 5-7-34, high liquid carbohydrate diet.

In looking over the literature referring to changes in the blood chemistry in bichloride of mercury poisoning, we find that the top figure for creatinin, 8.4 mgs., recorded on our chart, has been exceeded in a number of cases in the literature. Johnstone¹ reports one case which showed creatinin 9.9 mgs., with recovery, and another case with creatinin 13 mgs., with recovery.

Gatewood and Byfield² report one case of 11.37 mgs. of creatinin, and another case as high as 13.1 mgs. Both of these patients got well. They quote Myers and Lough³ to the effect that high creatinin findings following bichloride of mercury poisoning do not have the significance that they have in ordinary nephritis.

Myers and Lough³ are convinced that creatinin readings from 3 mgs. to 5 mgs. in nephritis produced otherwise than in bichloride of mercury poisoning are a very unfavorable sign, and a creatinin reading above 5 mgs. generally means early fatal termination.

The highest creatinin reading we were able to discover is that reported by Billman⁴. His patient showed creatinin on different days of 15 mgs., 15 mgs., 24 mgs., and 15 mgs.; and N. P. N. in the same individual was something in excess of 200 mgs., yet eventually recovery ensued.

1. Johnstone, B. I.: Acute mercury poisoning: reports of 21 cases with suggestions for treatment. *Canad. M. A. J.* 24: 500-507 (April) 1931.

2. Gatewood, L. C. and Byfield, Arthur F.: A clinical report on acute cases of mercuric chlorid poisoning, *Arch. Int. Med.*, Sept. '23.

3. Myers and Lough: *Arch. Int. Med.*, October 1915.

4. Billman, B.: Hyperpyrexia in mercurial poisoning, *Arch. Physical Therapy, X-Ray, and Radium*, 14: 618-620 (October) 1933.

Johnstone's¹ paper contains a good deal of very interesting historical data. He says mercury is commonly found in the urine of dentists and people who have amalgam tooth fillings.

COMMENT ON TREATMENT

Blaisdell⁵ reports experience in the use of sodium thiosulphate at the Maine General Hospital. Sodium thiosulphate had been in use in that institution for acute mercurial poisoning since 1928. Despite that fact the death rate prior to 1930 was 33%. In the summer of 1930 the staff of the hospital decided to increase the dose of sodium thiosulphate, and the dose was accordingly stepped up so that each patient received six grams, intravenously, on three successive days. This seems to have been the minimum dosage which they considered proper.

Blaisdell⁵ reports his experience with cases of acute bichloride poisoning since that time. All of these cases recovered. All treatment was by the intravenous route.

The first case received six grams on three successive days. The second case received six grams for three successive days. The third case received six grams for five successive days. The fourth case received six grams for three successive days. The fifth case received six grams for three successive days. The sixth case received six grams for five successive days. The seventh case received six grams for four successive days. The eighth case received eight grams for four successive days. The ninth case received six grams for three successive days.

These are very interesting observations, and these clinicians are very much inclined to believe that the early disappointing results from the use of sodium thiosulphate were due to the fact that the dosage had been too small.

During the course of the discussion they quote the work of a Swedish clinician, who recorded twenty-three instances of acute bichloride poisoning, with 100% recoveries. This observer used from 8 to 12 grams of sodium thiosulphate daily, intravenously, for from 3 to 5 days.

5. Blaisdell, E. R.: The use of large doses of sodium thiosulphate in acute mercurial poisoning: ten cases with no deaths, *Maine Med. J.*, January 13, 1932.

Still more recent developments are contained in the papers of S. M. Rosenthal⁶. His last contribution reports his experience in the use of sodium formaldehyde sulfoxylate. In 10 cases of acute bichloride of mercury poisoning recovery occurred in all instances without perceptible kidney damage following the use of this remedy.

J. M. J.—CASE NO. 82852

Date	R. B. C.	B. P.	W. B. C.	HGB.	Creatinin	N. P. N.
3-12-34	4,500,000		27,000	80	2.5	48
3-13-34	4,875,000	135/90	30,000	75	3.	54
3-14-34		150/85			6.5	75
3-35-34 8: A.M.	3,250,000	160/90	7,500	70	7.6	54
3-15-34 2: P.M.					8.	90
3-16-34		158/90			8.	105
3-17-34		190/85			8.2	90
3-18-34		170/80			8.2	108
3-19-34		198/85			8.4	105
3-20-34	3,800,000	184/90	31,000	80	6.	102
3-21-34	3,800,000	173/80	28,000	70	7.2	128
3-22-34	4,000,000	150/80	22,000	75	7.2	126
3-23-34	3,350,000	158/85	22,000	70	4.4	114
3-24-34	3,670,000	155/80	18,000	75	5.6	39
3-25-34	3,475,000	150/85	23,000	70	5.	36
3-26-34	3,300,000	145/75	23,000	60	4.2	45
3-27-34	2,000,000	130/70	32,000	65	3.5	42
3-28-34	2,175,000	155/60	31,000	35	2.9	57
3-29-34	2,100,000	130/40	30,000	40	2.4	30
3-30-34	1,300,000	140/60		55	2.5	36
3-31-34	1,725,000	125/65	28,000	30	1.7	24
4-1-34	1,700,000	140/75	32,000	30		
4-2-34	2,150,000		25,000	50	1.9	18
4-3-34	2,000,000		26,000	55	1.5	18
4-4-34	1,925,000		19,000	55		
4-5-34	1,925,000		16,000	50		
4-6-34	1,400,000		13,000	50	1.7	18
4-8-34	2,450,000		11,000	50		
4-9-34					1.5	18
4-11-34	3,300,000		7,500	60		
4-13-34	3,200,000		12,000	65		
4-14-34	2,350,000		10,000	65		
4-15-34	2,700,000		5,000	65		
4-16-34	3,150,000		12,250	60	1.6	18
4-17-34	3,150,000		7,500	65		
4-18-34	3,225,000		8,250	55	1.6	18
4-19-34	3,200,000		7,000	65		
4-20-34	2,875,000		5,250	65	1.5	18
4-21-34	3,175,000		4,000	65		
4-22-34	3,300,000		5,250	65		
4-23-34	3,000,000		6,500	80	1.5	18
4-24-34	3,000,000		8,250	65		
4-25-34	3,650,000		5,750	60		
4-27-34	3,500,000		8,000	65	1.5	21
4-28-34	4,000,000		4,750	65		
4-29-34	3,700,000		4,750	65		
4-30-34	3,700,000		9,500	60	1.4	30
5-1-34	4,700,000		7,250	65		
5-2-34	3,650,000		8,250	65		
5-3-34	3,900,000		4,000	70		
5-4-34	3,700,000		7,250	65		
5-5-34	4,875,000		5,750	70		
5-6-34	3,425,000		5,000	70		
5-7-34	4,100,000		4,000	80		
6-4-34 (Out-Clinic)					1.5	21
6-8-34 (Out-Clinic)		130/80				
6-14-34 (Out-Clinic)		120/80				

Discharged from hospital 5-7-34.

6. Rosenthal, Sanford M.: An antidote for acute mercury poisoning, *J. A. M. A.*, 102: 1273-1276 (April) 1934.

Rosenthal, Sanford M.: Experimental studies on acute mercurial poisoning, *Pub. Health Rep.* 48: 1543-1560 (Dec. 29) 1933.

RABIES*

PREVALENCE, TREATMENT, CONTROL

By
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Rabies is an infectious disease caused by a filterable virus which, in nervous tissue, is associated with Negri bodies. While primarily a disease of wolves and dogs, all warm-blooded animals, including man, are susceptible though to a somewhat different degree. Clinically there are two types, or stages: (1) That of cerebrospinal excitation or irritation—furious rabies; and (2) that of nerve-system degeneration—dumb, or paralytic rabies. Many cases show mixed symptoms and a few are quite atypical.

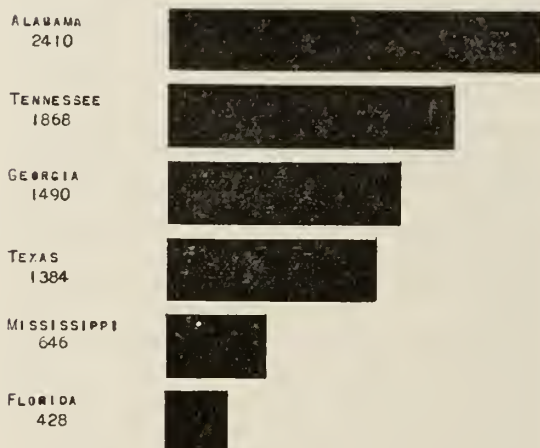
Rabies is known to have been present in China since the time of Confucius. Aristotle, in the 4th century B. C. wrote: "Dogs suffer from madness which puts them in a state of fury, and all animals which they bite when in this condition become also attacked with madness." Its prevalence has continued unabated in the less civilized countries such as China, India, and Russia where little or no control has been exercised. Control measures, as might be expected, have been most successful in island countries such as England, Japan, New Zealand, and Australia.

In the United States the incidence of rabies has steadily increased since its introduction into this country about 1750 (Moore).¹ Kerr and Simpson² found little of this disease in the Eastern States in 1908 and reported California free. In 1926, according to Rice and Beatty,² these states were heavily infected. At the present time, except in a few states along the Canadian border, all are infected, and the prevalence appears greatest in the South.

The prevalence of rabies, and the problem it offers to any community, is best judged by (1) the number of animals found rabid, and (2) the number of persons taking antirabic treatment. Such information,

of course, is not entirely reliable for comparative purposes due to the incompleteness of available data. Information for Alabama and several neighboring states is very complete, but in others the prevalence is possibly greater than figures indicate.

ANIMALS FOUND RABID ON LABORATORY EXAMINATION
SIX SOUTHERN STATES - Total 1929 THROUGH 1932



But, granting this, we can, we think, offer good evidence that rabies is more prevalent in Alabama than in other states, that its incidence in Jefferson County is greater than in any of the other sixty-six counties, and that Birmingham is the rabies capital of North America, if not of the civilized world.

	ANTIRABIC TREATMENTS ADMINISTERED 5 YEAR PERIOD - 1929-1933.		
	TOTAL NUMBER OF TREATMENTS	TREATMENTS PER 10,000 POPULATION	AVERAGE ANNUAL INCIDENCE
ALABAMA	13,212	50	25.7%
GEORGIA	9,812	34	18.2%
MISSISSIPPI	6,063	30	16.6%

Recent data, furnished through the kindness of Dr. R. C. Williams, Assistant Surgeon General, summarize the annual reports of various state health departments, and show that a considerably greater number of rabid animals were diagnosed in the Alabama State Laboratories than in twenty-nine other states for which information was available; and, that a considerably greater number of persons took antirabic treatment in Alabama than in thirteen states for which information was available.

*Read at a meeting of the Jefferson County Medical Society, Birmingham, November 5, 1934.

*From the Jefferson County Board of Health.

1. Moore, Veranus A.: Rabies and its control, New York State J. Med. Aug. 15, 1927, Page 896.

2. Rice, T. B. and Beatty, Norman: The prevalence of rabies in the U. S. and the world, Am. J. Pub. Health, Apr. 28, p. 421.

CONCENTRATION OF KNOWN RABID ANIMALS*
Five Year Period, 1929 Through 1933

	By Population	By Area
Alabama (Exclusive of Jefferson County)	1 per 1,208 persons	1 per 23 sq. mi.
Jefferson County (Including Birmingham)	1 per 412 persons	1 per ea. sq. mi.
Birmingham	1 per 384 persons	13 per ea. sq. mi.

*Including only those animals receiving a positive laboratory diagnosis.

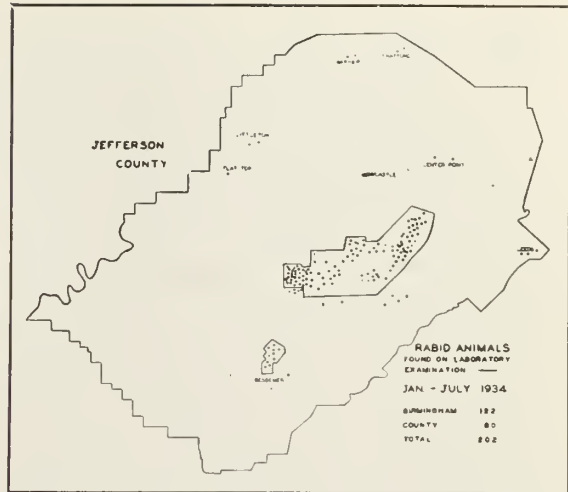
Birmingham, with an area equal to 1/1,000 and a population equal to 1/10 of Alabama, has within its borders 1/5 of all the rabid animals while its citizens take 1/5 of all treatments administered in the State. Jefferson County with an area equal to 1/50 and a population equal to 1/6 of Alabama has within its borders 1/3 of all the rabid animals in the State while its citizens take 1/3 of all treatments.

PERSONS TAKING ANTIRABIC TREATMENT
Five Year Period, 1929 Through 1933

	Total Number	Proportion of Population
Alabama (Exclusive of Jefferson County)	8,851	1 in every 250 persons
Jefferson County (Including Birmingham)	4,360	1 in every 99 persons
Birmingham	2,703	1 in every 96 persons

This is not surprising when we consider our dog population. There are in Jefferson county 36,000 dogs of which 21,000 are within the corporate limits of Birmingham. Imagine, if you can, this collection of dogs equal in numbers to the human population, of Bessemer, Fairfield, and Tarrant City combined. Probably 95% of these animals run loose all, or at least part, of the time. It is estimated that between five and twenty-five rabid animals run loose on our city streets continuously, while annually there is an average of three known rabid dogs for each square mile in the City of Birmingham.

Locally and throughout the State an average of four persons take treatment for each animal found rabid. It is estimated that only about one person in ten, on an average, who takes treatment is actually



bitten; the other nine take vaccine because of various circumstances of exposure, most of which do not warrant its administration. Probably 90% of all antirabic vaccine administered is unnecessary, unwarranted, and should not be given. Within the past five years in Alabama (exclusive of Jefferson County) one person in every 250 has taken treatment while in Birmingham and Jefferson County one person in every 100 has taken treatment. Some individuals have received vaccine as many as four times. The large amount of vaccine administered seems to indicate that the people are vaccinating themselves and their children against this disease rather than their dogs.

TREATMENT

There is probably no disease about which the laity is more misinformed than rabies. Their fears, horrors, and wild superstitions, coupled with a superabundance of bad advice and fairy tales obtained from well meaning friends and neighbors, often render them in a state of panic before a physician is reached. Circumstances of exposure so infinitely remote as to make the possibilities of infection ridiculous, and unworthy of even momentary consideration, often cause such extreme mental anguish that nothing short of vaccine treatment can prevent nervous collapse of the individual. In this connection, it is most important that the physician maintain his professional dignity and not allow himself to be influenced by the undue apprehension of the patient. If rabies were as highly contagious as the general public conceives it to be, the

disease would outrank tuberculosis as a cause of death.

In any event more needs to be done than the mere giving of advice concerning vaccine treatment. A careful history is essential to determine what exposure the patient has had with the animal. The nature and extent of the bite from a suspicious animal should always be obtained by personal inspection; statements of the patient, or family, are too often unreliable, either because of exaggeration or understatement of facts.

Wounds made by animals suspected of having rabies should be cauterized with strong nitric acid. The acid should be carefully applied with a glass rod very thoroughly to all parts of the wound, care being taken that pockets and recesses do not escape. Prompt and thorough cauterization by nitric acid is seldom followed by rabies. While its effectiveness decreases with time it is still partially protective up to 48 hours. Nitric acid, because of its diffusibility and penetration, may be considered almost specific for rabies virus. Silver nitrate coagulates the surface of the wound, does not penetrate, and is not protective. Even actual cautery does not give as good results (Rosenau). On personal observation of several thousand patients who have applied for vaccine treatment, I have seen only one whose wounds were properly cauterized.

Advice regarding the administration of antirabic vaccine in an epidemic area like ours is different in some respects from that which might be proper in localities where rabies is not so prevalent. In advising treatment every dog that bites should be considered rabid until known to be otherwise. Whether the dog appears normal or sick it should be confined securely and observed for a period of fourteen days. In any event the animal should not be killed but be allowed to die a natural death. Microscopic examination of the brain should be made as soon after death as possible. A positive microscopic diagnosis of rabies is just as satisfactory and dependable as a positive microscopic diagnosis of malaria or tuberculosis. Negative examinations of killed animals, however, never exclude rabies. Contrary to general belief, only 40 to 60% of all suspicious animals show microscopic evidence of the disease.

Vaccine treatment of persons bitten, or who have fresh open wounds contaminated with saliva, should be started only after the animal has shown definite symptoms of rabies, or has died and a laboratory examination completed. With two exceptions, to be cited later, it is safe and usually desirable to delay treatment until the animal dies; and, the longer the animal lives the more evident it becomes that treatment is probably unnecessary. When the condition of the animal is unknown because it cannot be located, cannot be positively identified, has been killed, or the laboratory examination is unsatisfactory, it is advisable to give treatment to those bitten.

In the case of bites above the shoulders, or multiple severe lacerations of the body, treatment should be started immediately but may be discontinued later if the dog proves not to be rabid. In many cases it is probably safe to wait 24 to 48 hours if the dog can be observed by a veterinarian; but, unless the animal remains perfectly normal, treatment should not be further delayed. Local veterinarians are very keen in the diagnosis of rabies probably because they have had more experience with this disease than other members of their profession in North America.

MORTALITY OF RABIES IN UNTREATED CASES*

Following Exposure to Rabid Dogs

Multiple and deep wounds about the face.....	50-60 %
Multiple and deep wounds on other uncovered parts.....	30 %
Single and deep wounds on finger or neck.....	15 %
Superficial wounds on uncovered parts.....	10 %
Deep wounds on well-covered parts.....	3 %
Contact of recent wounds with infected saliva.....	.1%
Contact of wounds more than 24 hours old.....	0 %

*Quoted from Babes by Williams in "Nelson, Living Medicine", Vol. II, page 141.

The advisability of treatment under various circumstances is summarized in tables that follow. The point to emphasize is that treatment is usually advisable only following an actual bite, or the contamination of a fresh open wound with saliva from a rabid animal, or an animal in which rabies cannot be excluded. While, theoretically, rabies can be contracted from other types of exposure enumerated below, it practically never occurs. In fact vaccine

paralysis, or other complications resulting from the use of the vaccine are probably more frequent than the development of rabies following such exposures. These rules have been followed in advising against treatment in over 1,500 cases, as yet, without a fatality.

TREATMENT IS NOT ADVISABLE FOLLOWING

1. Contamination of old cuts, sores, abrasions, scratches, hangnails, etc., with saliva of known rabid animals.
2. Handling, eating after, sleeping with, kissing, or other intimate exposure to rabid animals.
3. Drinking milk of rabid cows; eating meat of rabid animals.
4. Bites of any animal living fourteen days from the time of biting.
5. Bites from fleas from rabid animals.
6. Any exposure to a case of human rabies other than an actual bite or contamination of fresh open wounds with saliva.

Following "Exposure" to a known rabid animal, or an animal in which the possibility of rabies cannot be excluded

TREATMENT BECOMES NECESSARY WHEN

1. The skin is broken by a bite or scratch.
2. Fresh open wounds are contaminated with saliva.
3. The circumstances of exposure in infants and young children are unknown.
4. Nervous or high strung women cannot be otherwise satisfied.

It seems paradoxical that rabies should be so common in animals and so rare in humans. Mortality rates cannot be used to judge the incidence of the disease because human deaths from rabies are so rare in both epidemic and non-epidemic areas. During 1930 there were sixty-one deaths from rabies in the United States; three of these were in Alabama. From 1929 through 1933 there were 14 such deaths in Alabama; since 1910 eight humans have died of rabies in Jefferson County.

Among persons not given treatment following actual bites from known rabid animals 16% develop the disease, the other 84% do not. Humans apparently are not so susceptible as animals and seem to have a degree of immunity to light infections. Unquestionably, hundreds of people, especially negroes, unconcerned about the possibilities of rabies, are bitten by rabid animals, yet they suffer only a very rare mortality. Negroes constitute 40% of our population, yet take less than 10% of all vaccine used locally, and suffer only an extremely rare mortality.

COMPLICATIONS

Complications³ following the administration of vaccine are infrequent yet their possibility must always be considered in advising treatment under questionable circumstances. The most common local reaction is the appearance of erythematous patches, attributed to allergy, at the site of inoculation usually about the sixth day. Urticaria may appear and differs in no particular from the urticaria well known in serum sickness. Slowly developing chronic abscesses sometimes occur in corpulent individuals due to poor absorption of vaccine. Infections occasionally occur from the use of contaminated instruments, or from improper sterilization of the skin. Locally in one instance, virulent hemolytic streptococci were injected into five patients with the same hypodermic needle.

According to Remlinger³ between 500 and 1,000 cases of paralysis have been attributed to the administration of antirabic vaccine. Paralysis as a complication of vaccine treatment by the Semple method (used in Alabama) occurs on an average of once in 12,000 cases. There are three clinical forms: (1) The ascending paralysis of Landry's type (2) Dorso-lumbar myelitis and (3) Neuritic forms involving most often the facial nerve. Bulbar paralysis causes death in 1/3 of the Landry types while the remaining cases usually recover rapidly. The cause of vaccine paralysis is not definitely known. Stuart, Krikorian,⁴ and Remlinger³ believe it due to the introduction of an excessive amount of foreign nerve protein. A differential diagnosis must exclude the paralytic forms of rabies, and poliomyelitis.

CONTROL

Rabies is a disease which could be completely exterminated if we would but apply the knowledge we now possess. If its incidence is to be materially reduced, there are two phases of control which must be given careful consideration: (1) The protection of humans seriously exposed to rabid animals by cauterization of wounds, and administration of antirabic vaccine;

3. Reports of International Rabies Conference, League of Nations, Geneva 1927, Chapters 2 and 3 by P. Remlinger.

4. Stuart & Krikorian: The neuro-paralytic accidents of anti-rabies treatment, *Ann. Trop. Med.*, Nov. '28.

and (2) The protection of both humans and animals by the destruction of stray or ownerless dogs, enforced confinement of dogs, muzzling, vaccination, or, preferably, a combination of these measures.

The prevention of rabies in humans by the administration of antirabic vaccine to those bitten or seriously exposed is necessary but expensive. The folly of relying on this measure to the exclusion of others is illustrated by our own experience as evidenced by (1) the alarming increase of persons who take vaccine treatment partly through necessity, and partly through fear and unwillingness, or inability, to take medical advice, (2) the occasional failure of vaccine to protect when bites are severe, and (3) the occasional complication that develops as a result of reaction to the vaccine. During the past five years (1929-33) the distribution of vaccine and payment of medical fees for indigents has cost the State approximately \$120,000. Under present arrangements these services cost Alabama about \$22,000 annually. Approximately \$7,000 of this is expended in Jefferson county of which \$4,500 is for Birmingham. This does not include the cost of medical care in the administration of vaccine to those who can pay their physicians.

With a fair degree of accuracy we can show the net returns of these expenditures. During 1933 in Alabama 3,620 treatments were administered at a cost to the State of about \$17,000. An average of 10% (or 362 persons) actually needed this treatment because of bites by rabid animals, or other exposure of an equally severe nature. For the remaining 90% treatment was unnecessary. Of all persons actually bitten we know that an average of 16% are infected and will develop the disease if vaccine is not administered. We can then safely say that in 1933 fifty-eight persons (16% of the 362 actually bitten) were saved from death by rabies through administration of 3,620 treatments at a cost of \$17,000. During this same year three persons died of rabies.

It easily follows that the most logical, and, in the end the most economical means of controlling rabies is by its eradication among dogs. At present no more than trivial measures are being instituted in the City, County, and State. No control meas-

ures, however, can be effective in the State unless they are successfully applied to Birmingham which acts as a point of focal infection for surrounding territory. By constant and unrelaxing vigilance, however, we could expect to maintain a reduction in the incidence of rabies in Birmingham of 60 to 90%. This would seem to be our local problem until more effective measures can be instituted on a larger scale.

Of the measures commonly adopted the destruction of dogs running at large is of first importance. We must not lose sight of the fact that a majority of the dogs at large belong to irresponsible persons who have not the proper regard for dog or neighbor. Obviously these individuals cannot be reached by any law unless the dog is confiscated and destroyed for violation of such law, or the owner arrested and fined. The first requisite, therefore, in the control of this disease is the enforced confinement of all dogs to the premises of their owners; and, the success or failure will be in direct proportion to the effectiveness with which this is carried out. People will confine their animals only if they know with certainty that they will be confiscated and destroyed if allowed to run at large.

Muzzling of dogs is too impractical to need further comment. Prophylactic vaccination of dogs every six to twelve months is most desirable from the standpoint of the individual owner. It is well to include compulsory vaccination as an adjunct to laws having as their main element the confinement of all dogs, provided, however, the public understands the limited usefulness of such vaccine. Prophylactic vaccination protects a certain percentage of animals. This protection is never absolute, and the degree of uncertainty is such that the bite of a vaccinated dog must be regarded with the same suspicion as one not vaccinated.

The successful enforcement of any dog law is handicapped by the lack of cooperation of the public. Those who are uninformed strenuously object on the ground that such measures are cruel and inhuman. Those who are well informed, and many who through neglect of others have been required to take antirabic treatment, appear too lethargic to voice any protest, or to demand any action on the part of gov-

erning bodies. Without doubt, the free distribution of vaccine, and the payment of medical fees for indigents by the State has contributed materially to the lethargic state of the public who otherwise might view control measures not only as desirable but necessary. Without public support the magnitude of this problem becomes no less than that of enforcing prohibition laws since public indifference not only undignifies the law but renders its enforcement impossible.

A further difficulty in law enforcement is that punishment usually must be visited on the wrong party. We question the sincerity of many dog lovers who in the past have strenuously opposed compulsory confinement and vaccination measures which are aimed to protect the animal against a disease having a mortality of 100%. For every dog found running at large some owner should be made to appear in police court and pay a fine. Further, laws should make the owner clearly responsible for the damage his animal may inflict. In any case he should be liable for the cost of medical care when persons bitten are required to take antirabic treatment.

It has been truthfully said that the dog is man's best friend. We can also say without fear of contraindication that, in present times, man is not only the dog's worst friend but also its best enemy. To allow one's dog to run loose in the streets of Birmingham is (as far as the dog is concerned) as ungrateful and ruthless as allowing one's child to play in the wards of a contagious hospital.

In conclusion, rabies is probably more prevalent locally than elsewhere on the North American Continent. That the control of rabies will be effected in the near future is very doubtful; that rabies is increasing is certain; and, that in the future it will become a problem more difficult and more expensive to control is doubly certain.

Note:—Since this paper was written control measures have been instituted in Birmingham which, if rigidly and continuously enforced, will effectively control rabies.

A Correction: Lines 10 and 11, page 274, February Journal—Dr. E. D. Lineberry's discussion of hypertension—should read "and is second to rheumatic infections as a producer of cardiac disease."

A METHOD FOR STERILIZING SHOES AGAINST FUNGI

By
J. LAMAR CALLAWAY, M. D.
University, Alabama

There arises on numerous occasions the problem of sterilizing shoes against the common ringworm fungi that are the common cause of dermatophytosis or "athlete's foot."

Everyone is familiar with the many recurrences of "athlete's foot" following the quite adequate treatment with Whitfield's ointment, or any of the various modifications and accessory treatments used by different physicians. In reality, however, there is more often not a recurrence of the disease but a reinfection from shoes and socks which are almost invariably infested with the fungi living and growing in them.

The original infection may have been obtained in any number of ways. Usually the disease is first contracted in swimming pools, showers, locker rooms, etc., but the disease is perpetuated and maintained by wearing socks, shoes and slippers that contain the organism.

There have been many methods devised to sterilize shoes and other wearing apparel among which are the following:

(a) Take a cloth saturated with formaldehyde and being careful not to get the solution on the hands swab out the interior of the shoes. (b) Place a cloth saturated in formaldehyde in the toe of the shoe and leave overnight. (c) Place a blotter that has been previously saturated in formaldehyde in the shoe as an inner sole and wear for several days. There are other methods.

The method that I prefer is as follows: Into a large container that may be made airtight place one quart of formaldehyde. An ordinary lard can fills all requirements nicely. Place some object in the bottom of the container to support the shoes above the fluid. Put the shoes one has been wearing, including bedroom and bathroom shoes, above the liquid. Then apply the lid making the container airtight and leave the shoes exposed to the fumes of the formaldehyde for twenty-four to forty-eight hours.

This method has proven quite satisfactory in all the cases in which I have observed its use. In addition to being inexpensive it affords a clean and effective method of sterilizing several shoes at one time. Its use will tend to lessen recurrences of dermatophytosis.

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IS A SPIRIT OF CULT TOLERATION WISE?

In 1877, by an Act of the General Assembly of Alabama, the Medical Association of the State of Alabama, speaking through its State Board of Censors, which also serves as a State Board of Medical Examiners, was made the instrument for regulating and enforcing the Medical Practice Act of this State. During these fifty-eight years, because of the unprecedented discoveries with which modern medicine is now adorned, it has been snatched from an empirical status and rests upon a solid bed-rock of scientific achievement. Within this period, also, have sprung into existence multitudinous cults and paths whose extravagant claims, however unscientifically founded, would quickly rescue suffering mortals from an untimely grave, while synchronously separating them from their hard earned lucre. In most states, through the coercive effort of these various groups, legal recognition has been gained and separate "boards of control" have been set up for each. The more recent effort on the part of licensing boards in quite a few states to create what is known as basic science boards for all who propose to practise the healing art is but an expression of the need for a minimal basic training in

the essentials of medicine, regardless of the form of treatment or therapy to be applied. Precisely this view is the one entertained by Alabama's Board of Medical Examiners and the organised medical profession ever since the inception of medical licensure. In brief and in substance it is that there should be but one yard stick by which all seeking to deal with human ailments should be measured and into this measuring rod should be incorporated the basic, essential things necessary for all. Despite numerous efforts to brush aside these standards, succeeding legislatures have clung to the sound principles enumerated above and have been unwilling to yield to the importunities of poorly trained groups. In this connection, the excerpt given below from the London Medical Correspondent to the American Medical Association, regarding an attempt made by osteopaths to gain legal recognition in England, will prove interesting reading to the members of our Association. The line of reasoning followed by the Medical Secretary of the British Medical Association is quite similar to that employed in an article appearing under the Association Forum in the January number of the State Journal, although few thinking doctors in this State are yet prepared to subscribe to the views expressed by Lord Horder in the last paragraph as to the position to be taken by orthodox medicine in such legislative matters.

The British Medical Association And The Attempt Of The Osteopaths To Obtain Registration

The second reading in the house of lords of the bill for the registration and regulation of osteopaths was reported in a previous letter. A special committee of the council of the British Medical Association is preparing a memorandum on osteopathy, and the medical secretary has prepared the following preliminary criticism: If the bill becomes law, two different classes of practitioners recognized under different acts will be set up. The purpose of the medical acts now in existence was to draw a clear line between persons who have and persons who have not passed through the authorized medical curriculum. This will be defeated. The student of osteopathy, after a course of instruction of considerably less duration than the medical student, will be admitted to the register of osteopaths and entitled to hold himself out to practice in the wide field of medicine. A new type of practitioner will appear and the public will have to distinguish for itself between those who have satisfied the full requirements of the General Med-

ical Council, those who have satisfied the lesser and different requirements of the Board of Registration of Osteopaths, and those who have received no recognized training at all. Today any physician is free to practice any form of treatment which he regards as beneficial. Neither belief in osteopathy nor the practicing of it can exclude any one from the Medical Register. The General Medical Council, which controls practice, is expressly prohibited from making any distinction between practitioners following different theories or methods of treatment. Those who have a knowledge of the human body in health and disease sufficient to justify them in engaging in medical practice can satisfy the requirements of the General Medical Council and then adopt what methods they like.

Of the "osteopathy" which the bill is to recognize, little information is given by those claiming registration. It is described as "a system of treatment by manipulation methods." Yet in clause 8 of the bill it is laid down that no one unless registered under this act shall practice osteopathy. The course of instruction is shorter than that demanded of the medical student. The effect of this would be to attract a new and inferior type of student. Yet on admission to the register he will hold himself out as qualified to practice practically the whole field of medicine. Such a register will prove a back door to medicine. Is this in the public interest? As the law stands, the public can seek its treatment where it likes, with the Medical Register to enable it to distinguish those who have satisfied minimum standards. Soon there will be demands from other cults, and registers will multiply. The bill precludes any one not registered as an osteopath from practicing osteopathy, which is described merely as a system of manipulative treatment. It follows that physicians are to be prevented from using manipulative treatment. No monopoly of any particular system of treatment should be created. According to the bill the proposed board of registration will consist of a chairman appointed by the privy council, two persons representative of science, not being physicians, appointed by the ministry of health and eight osteopaths, five of whom are to be appointed by the British Osteopathic Association. How can a board thus created have an intimate acquaintance with medical science? Medical education must rest on a broad scientific foundation, so that the student may be both competent in practice and trained to judge the value, or want of value, of future developments. Such a training cannot be provided in institutions restricted to a particular theory.

Speaking at the annual dinner of the Medico-Legal Society, Lord Horder made some crucial objections to the proposed registration. It was difficult for him to conceive how it was possible to erect a single therapeutic measure into a system of medicine, to eliminate the art of diagnosis and the basis of all medicine, which was pathology, and proceed straight to treatment. He wondered what was going to happen to the British public if for diagnosis and the pathology that underlay diagnosis there was substituted one single treatment, however important, and if the man who had this one method of treatment at his command was to be

elevated to the position of a registered medical practitioner. Still, if the public wanted it, let it be tried out. He did not think that physicians should protest too much against that sort of thing. The more they protested the more would osteopaths consider themselves martyrs, and martyrdom was valuable propaganda. J. N. B.

DILAUDID

Dilaudid (dihydromorphinone hydrochloride), a new morphine derivative, was introduced into this country from Germany in 1932 by Alvarez¹ and since that time there has been much discussion and some controversy as to its merits and demerits. Two recent reports have thrown more light upon the nature and actions of this new drug.

David² has compared the effects of dilaudid and morphine upon the basal metabolism and other body functions of normal young adults without considering their habit forming tendencies. He believes that dilaudid acts more rapidly than morphine and causes slightly less respiratory depression. David says, "Morpine and dilaudid, administered subcutaneously in therapeutic doses, tend to lower the basal metabolic rate in proportion, usually, to the dose given." And he also holds that in general, it is apparent that therapeutic doses of either morphine or dilaudid have little appreciable effect on the pulse rate, pulse pressure, respiratory rate and body temperature, although the tendency is toward a decrease from the normal level. While the changes occurring in the respiratory rate may be due to the depressant action of the drug directly on the respiratory center, it is felt that what changes occur in the circulation and temperature are secondary to the lowering of the basal metabolic rate." He believes that his experiments prove dilaudid to be at least ten times as potent as morphine, instead of about five times, as it is generally believed.

Stroud³ studied the use of dilaudid in the pain of cancer in 114 selected cases which

1. Alvarez, W. C.: Dihydromorphinone hydrochloride, dilaudid, Bilhuber-Knoll, Proc. Staff Meeting, Mayo Clin. 7: 480 (Aug. 17) '32.

2. David, Norman A.: Dilaudid and morphine effects on basal metabolism and other body functions, J. A. M. A. 103: 474 (Aug. 18) '34.

3. Stroud, C. Malone: The use of dilaudid in the pain of cancer, J. A. M. A. 103: 1421 (Nov. 10) '34.

"have been observed carefully to their termination and the patients have possessed sufficient intelligence to cooperate in their management." He finds that "dilaudid is rather rapidly absorbed and quickly effective if given either by mouth or by hypodermic injection. Absorption is delayed when it is given by rectal suppository and, consequently, the action is more sustained. This is of distinct advantage in the administration of the bedtime dose. Best effects were obtained by the administration of varying amounts about every three hours." Euphoria was noted only rarely and several patients, who took dilaudid for twelve weeks or longer, were able, when they no longer needed it, to give up without craving. There were some cases of habituation, but Stroud believes dilaudid to be less habit forming than morphine. "Undesirable side effects were not evident in most cases. Nausea, even in malignant conditions of the intestinal tract, was noted but four times in this series." Constipation was never a troublesome factor. Stroud quotes other authors as reporting marked depression of the respiratory center, but says not once did he encounter this difficulty in 114 cases. And he states that "despite the fact that tolerance and habituation to the drug are undoubtedly more common than physicians were formerly led to believe, deterioration of character was much less marked than had been noted with morphine. Most patients approached death with less anxiety and, consequently, with a better morale than had been noted before the use of dilaudid. "Dilaudid is an efficient analgesic in the control of constant pain. It is more helpful in cancer than any other opiate I have used."

Dilaudid is too new to have yet found its proper place in the therapeutic armamentarium, but this will doubtless be brought about by further research and experimentation. It certainly has potentialities and studies like the above are excellent means of throwing more light upon this subject.

W. W.

CALLED MEETING OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

At the request of the Board of Trustees of the American Medical Association, the House of Delegates met in special session in Chicago on February 15th and 16th, 1935; this was the first extraordinary session of the House held since 1917, at which time this body was assembled in special session to devise suitable methods as to how the medical profession might best make its contributions to our country which had just entered the World War. The purpose of the meeting just held in Chicago and as stated by the Board of Trustees in its call was for "the consideration of the social and economic policies of the Association as related to pending and proposed legislation, to sickness insurance and to other matters which may be submitted by the Board of Trustees." There were 161 delegates present out of a possible 175, Alabama being represented by delegates A. A. Walker and J. N. Baker; J. S. McLester, President-Elect of the American Medical Association, was also in attendance. All meetings were held in executive session. The Board of Trustees first submitted, through its Chairman, Dr. Upham, a general, broad outline for the guidance of the members of the House of the proposed and pending Federal legislation having immediate and direct bearing on organized medicine and of the present status and progress thus far made by the several committees having these matters in charge. This report was followed by statements from Dr. Walter Biering, President of the American Medical Association, and a member of the Medical Advisory Board to the President's Committee on Economic Security; from Dr. R. G. Leland, of the Bureau of Medical Economics of the American Medical Association, and who also served on the technical advisory staff for medical service to the Economic Security Committee; and from Dr. Olin West, Secretary of the American Medical Association. From the reports made by these gentlemen the impression was left that there existed in Washington a veil of secrecy and a lack of willingness on the part of those to whom had been delegated the medical phases of the security program to accord the representatives of the medi-

"Our ideas are only intellectual instruments which help us to penetrate phenomena. We should drop them when they have served their turn, even as one scrapes a bistoury grown rusty with age."—Claude Bernard.

cal profession the opportunities for a candid presentation of its views and plans. There then followed a general discussion, on the part of the members of the House of Delegates, of the medical aspects of many of the problems which enter a program of social security, as well as a discussion of some of the specific items incorporated in the already submitted Wagner Bill and of the so-called Epstein Bill. Many resolutions were also submitted. At the conclusion of these deliberations, which consumed the morning and afternoon sessions, a reference committee, composed of seven members, was appointed by the Speaker with instructions to weigh and digest the resolutions and matters presented and to submit to the House for its further consideration its written report and recommendations. On the following day the reference committee's report was received, and, after much discussion, amended, revised and finally unanimously adopted by the House of Delegates, with the further recommendation that copies be immediately transmitted to the various Medical Associations with the request that they be given wide publicity both among doctors in each state and the public as well.

Throughout the discussions bearing on the Wagner Bill now before Congress, those sections dealing with subsidies for general health purposes and research work (\$10,000,000) to be dispensed through the United States Public Health Service had nothing but commendation and approval. Those sections seeking Federal subsidies for maternity and child health work and for the care of crippled children were likewise approved in principle as to the need for such aid. The bill as now drafted places the administration of these activities in the Department of Labor, and inevitably under lay control. The principle of assigning activities largely of a medical nature to a bureau or department not administered and supervised through professionally trained personnel appears to be neither logical nor sound and the recommendations of the House of Delegates as they pertain to these sections of the Wagner Bill rest upon this reasoning.

In order that the members of our Association may have a more complete understanding and grasp of the picture there is

reproduced in this issue of the Journal immediately below not only the report of the action taken by the House of Delegates of the American Medical Association and the ten points for guidance of State and County Medical Societies, but also that portion of the report of the Committee on Economic Security submitted to the President of the United States and having direct bearing on the medical profession and health problems.

The House of Delegates is to be commended for the earnest manner in which it laboured to give expression to the majority sentiment of organised medicine as reflected by the delegates from the various states of the Union. There was full appreciation and expression given for the need of re-vamping and readjustment of present methods of dispensing medical services to fit the changing social order, but the sentiment was likewise clearly expressed that a hasty adoption of the European principles of compulsory health insurance on a nation-wide basis, governmentally financed and controlled, was, at present, justified neither by the exigencies of the situation in which our country finds itself nor by the application of the democratic principles of the American philosophy of life; that already considerable experimentation is going on within the profession as to how these needs can be met and solved, and, if given time and opportunity, it would earnestly strive to furnish a solution satisfactory and acceptable to all. These are the thoughts which dominated the House of Delegates and upon which dangles the final report emanating from that body. If no decisive action is immediately taken by the Federal Congress in this matter to utilise compulsory health insurance, the next move is clearly up to organised medicine to submit definite and concrete plans of a practical and workable nature. Humanity's atmosphere is now so charged with a spirit of unrest that bold experimentation, even though unwise and destructive of age-old traditions, are being given free rein. If medical traditions and professional heritages older by centuries than the Christian religion, are to be preserved to posterity, surely the time has come for the medical profession to emerge from its shell of seclusion, of diffidence and of apparent

indifference and to produce the leadership needed both by humanity and itself in this emergency.

J. N. B.

REPORT OF THE REFERENCE COMMITTEE
SPECIAL SESSION HOUSE OF DELEGATES
AMERICAN MEDICAL ASSOCIATION

February 15 and 16, 1935

NOTE: The report of the Reference Committee as it appears below was finally adopted by the House of Delegates of the American Medical Association as giving expression to the majority opinion of organized medicine throughout the country at large.

Your reference committee, believing that regimentation of the medical profession and lay control of medical practice will be fatal to medical progress and inevitably lower the quality of medical service now available to the American people, condemns unreservedly all propaganda, legislation or political manipulation leading to these ends.

Your reference committee has given careful consideration to the record by the Board of Trustees of the previous actions of this House of Delegates concerning sickness insurance and organized medical care and to the account of the measures taken by the Board of Trustees and the officials of the Association to present this point of view to the government and to the people.

The American Medical Association, embracing in its membership some 100,000 of the physicians of the United States, is by far the largest medical organization in this country. The House of Delegates would point out that the American Medical Association is the only medical organization open to all reputable physicians and established on truly democratic principles, and that this House of Delegates, as constituted, is the only body truly representative of the medical profession.

The House of Delegates commends the Board of Trustees and the officers of the Association for their efforts in presenting correctly, maintaining and promoting the policies and principles, heretofore established by this body.

The primary considerations of the physicians constituting the American Medical Associations are the welfare of the people, the preservation of their health and their care in sickness, the advancement of medi-

cal science, the improvement of medical care, and the provision of adequate medical service to all the people. These physicians are the only body in the United States qualified by experience and training to guide and suitably control plans for the provision of medical care. The fact that the quality of medical service to the people of the United States today is better than that of any other country in the world is evidence of the extent to which the American medical profession has fulfilled its obligations.

The House of Delegates of the American Medical Association reaffirms its opposition to all forms of compulsory sickness insurance whether administered by the Federal government, the governments of the individual states or by any individual industry, community or similar body. It reaffirms, also, its encouragements to local medical organizations to establish plans for the provision of adequate medical service for all of the people, adjusted to present economic conditions, by voluntary budgeting to meet the cost of illness.

The medical profession has given of its utmost to the American people, not only in this but in every previous emergency. It has never required compulsion but has always volunteered its services in anticipation of their need.

The Committee on Economic Security, appointed by the President of the United States, presented in a preliminary report to Congress on January 17 eleven principles which that Committee considered fundamental to a proposed plan of compulsory health insurance. The House of Delegates is glad to recognize that some of the fundamental considerations for an adequate, reliable and safe medical service established by the medical profession through years of experience in medical practice are found by the Committee to be essential to its own plans.

However, so many inconsistencies and incompatibilities are apparent in the report of the President's Committee on Economic Security thus far presented that many more facts and details are necessary for a proper consideration.

The House of Delegates recognizes the necessity, under conditions of emergency, for federal aid in meeting basic needs of the indigent; it deprecates, however, any

provision whereby federal subsidies for medical services are administered and controlled by a lay bureau. While the desirability of adequate medical service for crippled children and for the preservation of child and maternal health is beyond question, the House of Delegates deplores and protests those sections of the Wagner Bill which place in the Children's Bureau of the Department of Labor the responsibility for the administration of funds for these purposes.

The House of Delegates condemns as pernicious that section of the Wagner Bill which creates a social insurance board without specification of the character of its personnel to administer functions essentially medical in character and demanding technical knowledge not available to those without medical training.

The so-called Epstein Bill, proposed by the American Association for Social Security now being promoted with propaganda in the individual states, is a vicious, deceptive, dangerous and demoralizing measure. An analysis of this proposed law has been published by the American Medical Association. It introduces such hazardous principles as multiple taxation, inordinate costs, extravagant administration and an inevitable trend toward social and financial bankruptcy.

The committee has studied this matter from a broad standpoint, considering many plans submitted by the Bureau of Medical Economics as well as those conveyed in resolutions from the floor of the House of Delegates. It reiterates the fact that there is no model plan which is a cure-all for the social ills any more than there is a panacea for the physical ills that affect mankind. There are now more than 150 plans for medical service undergoing study and trial in various communities in the United States. Your Bureau of Medical Economics has studied these plans and is now ready and willing to advise medical societies in the creation and operation of such plans. The plans developed by the Bureau of Medical Economics will serve the people of the community in the prevention of disease, the maintenance of health and with curative care in illness. They must at the same time meet apparent economic factors and protect the public welfare by safeguarding

to the medical profession the functions of control of medical standards and the continued advancement of medical educational requirements. They must not destroy that initiative which is vital to the highest type of medical service.

In the establishment of all such plans, county medical societies must be guided by the ten fundamental principles adopted by this House of Delegates at the annual session in June 1934. The House of Delegates would again emphasize particularly the necessity for separate provision for hospital facilities and the physician's services. Payment for medical service, whether by prepayment plans, installment purchase or so-called voluntary hospital insurance plans, must hold, as absolutely distinct, remuneration for hospital care on the one hand and the individual, personal, scientific ministrations of the physician on the other.

Your Reference Committee suggests that the Board of Trustees request the Bureau of Medical Economics to study further the plans now existing and such as may develop, with special reference to the way in which they meet the needs of their communities, to the costs of operation, to the quality of service rendered, the effects of such service on the medical profession, the applicability to rural, village, urban and industrial population, and to develop for presentation at the meeting of the American Medical Association in June model skeleton plans adapted to the needs of populations of various types.

(Signed):

Dr. Harry H. Wilson, Chairman, California,
Dr. Warren F. Draper, Virginia,
Dr. E. F. Cody, Massachusetts,
Dr. E. H. Carey, Texas,
Dr. N. B. Van Etten, New York,
Dr. F. S. Crockett, Indiana,
Dr. W. F. Braasch, Minnesota.

APPENDIX A

Ten points recommended by the House of Delegates of the American Medical Association for the guidance of State and County Medical Societies in formulating plans for budgeting of medical services follow:

First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a duly qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a 'family physician'. This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

Eighth: Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the 'comfort level' standards of incomes.

Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

APPENDIX B

The Committee on Economic Security in the report submitted to the President on January 17th, in dealing with the broad problems of health and sickness, expressed itself, in part, as follows:

As a first measure for meeting the very serious problem of sickness in families with low income we recommend a nation-wide preventive public health program. It should be largely financed by state and local governments and administered by state and local health departments, the federal government to contribute financial and technical aid. The program contemplates (1) grants in aid to be allocated through state departments of health to local areas unable to finance public health programs from state and local resources, (2) direct aid to states in the development of state health services and the training of personnel for state and local health work, and (3) additional personnel in the United States Public Health

Service to investigate health problems of interstate or national concern.

The second major step we believe to be the application of the principles of insurance to this problem. We are not prepared at this time to make recommendations for a system of health insurance. We have enlisted the cooperation of advisory groups representing the medical and dental professions and hospital management in the development of a plan for health insurance which will be beneficial alike to the public and the professions concerned. We have asked these groups to complete their work by March 1, 1935, and expect to make a further report on this subject at that time or shortly thereafter. Elsewhere in our report we state principles on which our study of health insurance is proceeding, which indicate clearly that we contemplate no action that will not be quite as much in the interests of the members of the professions concerned as of the families with low incomes.

In the matter of health insurance, the following eleven points are made and are the ones referred to in the report of the House of Delegates:

1. The fundamental goals of health insurance are: (a) the provision of adequate health and medical services to the insured population and their families; (b) the development of a system whereby people are enabled to budget the costs of wage loss and of medical costs; (c) the assurance of reasonably adequate remuneration to medical practitioners and institutions; (d) the development under professional auspices of new incentives for improvement in the quality of medical services.

2. In the administration of the services the medical profession should be accorded responsibility for the control of professional personnel and procedures and for the maintenance and improvement of the quality of service; practitioners should have broad freedom to engage in insurance practice, to accept or reject patients, and to choose the procedure of remuneration for their services; insured persons should have freedom to choose their physicians and institutions; and the insurance plan shall recognize the continuance of the private practice of medicine and of the allied professions.

3. Health insurance shall exclude commercial or any other intermediary agents between the insured population and the professional agencies which serve them.

4. The insurance benefits must be considered in two broad classes; (a) cash payments in partial replacement of wage loss due to sickness and for maternity cases, and (b) health and medical services.

5. The administration of cash payments should be designed along the same general lines as for unemployment insurance and, so far as may be practical, should be linked with the administration of unemployment benefits.

6. The administration of health and medical services should be designed on a state-wide basis, under a federal law of a permissive character.

The administrative provisions should be adapted to agricultural and sparsely settled areas as well as to industrial sections, through the use of alternative procedures in raising the funds and furnishing the services.

7. The costs of cash payments to serve in partial replacement of wage loss are estimated as from 1 to 15 per cent of pay roll.

8. The costs of health and medical services under health insurance, for the employed population with family earnings up to \$3,000 a year, is not primarily a problem of finding new funds but of budgeting present expenditures, so that each family or worker carries an average risk rather than an uncertain risk. The population to be covered is accustomed to expend, on the average, about 4.5 per cent of its income for medical care.

9. Existing health and medical services provided by public funds for certain diseases or for entire populations should be correlated with the services required under the contributory plan of health insurance.

10. Health and medical services for persons without income, now mainly provided by public funds, could be absorbed into a contributory insurance system through the payment by relief or other public agencies of adjusted contributions for these classes.

11. The role of the federal government is conceived to be principally (a) to establish minimum standards for health insurance practice and (b) to provide subsidies, grants or other financial aids or incentives to states which undertake the development of health insurance systems which meet the federal standards.

Current Comment

VACCINATION AGAINST ACUTE ANTERIOR POLIOMYELITIS

Editorial, New Orleans Medical and Surgical Journal, March 1935

Two recent articles have been published which deserve comment. The first of these by Kolmer et al reports on a continuation of the work that has been already published in part. The second is by Cowie whose contribution describes the protection given monkeys against virulent poliomyelitis virus.

Both of these two authors employ somewhat the same technic in securing the material to be used for vaccinating man or monkey. The attenuated virus is obtained in much the same manner as the virus of rabies. Kolmer makes up a 4 per cent suspension of poliomyelitis monkey spinal cord in a sterile 1 per cent solution of sodium ricinolate, whereas Cowie follows the Pasteur vaccination technic using a 5 per cent

suspension of emulsified cord tissue preserved in 0.7 per cent phenol. The results of Cowie show that it is possible to protect the monkey injected with virulent poliomyelitis virus intracerebrally in two out of three instances. Subsequent reinoculation did not protect these monkeys who showed at autopsy typical brain and cord changes. Kolmer vaccinated 25 children. His anti-body studies showed that in the great majority of instances there was a marked increase in anti-body formation. Anti-body protection occurred in 21, or 84 per cent, of these children who showed no effect from the vaccination. The duration of immunity following vaccination is not definitely known but he states that in the vaccinated monkeys it lasts for more than two years.

The importance of these researches hardly needs to be accentuated. There is no disease more dreaded than anterior poliomyelitis and if it should obtain epidemic proportions as it did in California in 1934, apparently with the vaccination that has independently been shown by two scientific workers to be efficacious, the exposed children can be protected.

SICKNESS INSURANCE

*Editorial, Texas State Journal of Medicine,
January 1935*

The medical profession is prone to agree and the public to think, that the practice of socialized medicine has been a success in Europe. It has not been a success, at least from the view point of the American public. The sort of practice involved lacks a lot of being that to which our people are accustomed. Even so, complaint is common and insistent, both from the medical profession and the public, the former that it is not adequately remunerated, and the latter that it is not adequately served. Controlling authorities are complaining bitterly that the cost of medical service is far exceeding reasonable amounts. There are bickerings, protests and political intrigue, a combination not very edifying or promising of satisfactory medical service. The Council on Medical Economics of the American Medical Association has ample data in support of this contention. It has been printed and is available in pamphlet form.

SIXTY-EIGHTH CONSECUTIVE ANNUAL SESSION THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

MOBILE, APRIL 16, 17 AND 18, 1935

HEADQUARTERS HOTEL—THE BATTLE HOUSE

HOSTS TO THE ASSOCIATION

The Mobile County Medical Society

COMMITTEES

Arrangements and Exhibits

P. J. M. Acker, Chairman

C. A. Mohr	Toulmin Gaines
W. L. Heiter	C. L. Rutherford
G. G. Oswalt	J. Leslie Taylor
W. C. Hannon	

Reception

J. D. Perdue, Chairman

J. H. Dodson	J. H. Baumhauer
E. W. Cawthon	N. R. Clarke, Jr.
H. R. Cogburn	H. B. Dowling, Jr.
G. H. Fonde	R. V. Taylor, Jr.

Publicity

E. B. Frazer, Chairman

I. M. Gravlee	T. D. Haas
D. E. Hodges	J. H. Little
L. V. McVay	H. G. Mulherin
J. Mac Bell	

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EDGAR BURNS
WILLIAM B. McGEE
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Louisville, Ky.

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F. W. Wilkerson.....	Montgomery
M. S. Davie.....	Dothan
J. D. Perdue.....	Mobile
Lloyd Noland.....	Fairfield

State Health Officer

J. N. Baker.....Montgomery

First Day, Tuesday, April 16

Morning Session

1. Call to Order at 9 A. M. by the President—
W. M. Cunningham, Jasper.
2. Invocation—
Reverend Father P. H. Yancy, S. J., Spring Hill College.
3. Addresses of Welcome—
Hon. Cecil F. Bates, Mayor of Mobile.
W. R. Meeker, President, Mobile County Medical Society.
4. Message of the President—
W. M. Cunningham, Jasper.
5. Report of the Vice-Presidents—
The joint report of the Vice-Presidents will be made by the Senior Vice-President,
G. W. Williamson, Hartford.
6. Report of the Secretary—
Douglas L. Cannon, Montgomery.
7. Report of the Treasurer—
J. U. Ray, Woodstock.
8. Report of the Committee of Publication—
Fred W. Wilkerson, Montgomery.
9. Reports of Standing Committees—
(a) Legislation and Medical Economics—
John A. Martin, Chairman
(b) Mental Hygiene—
F. A. Kay, Chairman.
(c) Maternal and Infant Welfare—
A. E. Thomas, Chairman.
(d) Prevention of Cancer—
K. F. Kesmodel, Chairman.
(e) Prevention of Blindness and Deafness—
H. F. Martin, Chairman.

Papers

Essayists, other than guest speakers, will be limited to 20 minutes for presentation of papers, with an extension of 10 minutes if slides are used; discussants will be limited to 5 minutes.

10. The Safety of Low Cesarean Section in the Obstetrical Emergency—

T. K. McFatter, Dothan.

The discussion will be opened by T. J. Brothers, Anniston, and H. S. Bruce, Opelika.

11. Chronic Undulant Fever—

Eugene Thames, Mobile.

The discussion will be opened by J. C. McLeod, Bay Minette, and James G. McAlpine, Montgomery.

Recess

Afternoon Session

Tuesday

Call to Order, 2:00 P. M.

Unfinished and Miscellaneous Business

1. Symposium on Pulmonary Tuberculosis:

(a) Prognosis—

R. Alec Brown, Montgomery.

(b) Surgical Treatment—

J. Otis Lisenby, Atmore.

(c) The discussion will be opened by L. W. Roe, Mobile, and E. V. Caldwell, Huntsville.

2. Skin Grafting: Its Relation to General Surgery—

Arthur Neal Owens, New Orleans.

The discussion will be opened by P. P. Salter, Eufaula, and R. C. Hill, Bellamy.

3. Foreign Bodies in the Food and Air Passages—

C. C. Perdue, Mobile.

The discussion will be opened by Porter Stiles, Birmingham, and H. H. Forcheimer, Mobile.

4. The Nervous Child—

W. Hill McCaslan, Union Springs.

The discussion will be opened by Hilton Rice, Montgomery, and Charles Abbott, Tuscaloosa.

5. Deep Surgical Infections of the Neck—

T. F. Wickliffe, Jasper.

The discussion will be opened by N. R. Clarke, Jr., Mobile, and T. F. Huey, Anniston.

Recess

Evening Session

Tuesday

Call to Order 8:00 P. M.

1. The Status of Hysterectomy in Rural Surgical Practice—

G. C. Ussery, Roanoke.

The discussion will be opened by C. P. Gay, Geneva, and L. D. Parker, Andalusia.

2. Acute (Hemorrhagic) Pancreatitis: With Lantern Slides—

D. C. Donald, Birmingham.

The discussion will be opened by W. H. Blake, Jr., Sheffield, and L. V. Stabler, Greenville.

3. The Enlarged Thymus: With Lantern Slides—

W. W. Harper, Selma.

The discussion will be opened by E. L. Gibson, Enterprise, and A. W. Ralls, Gadsden.

4. The Value of Local Applications in Diseases of the Respiratory Tract—

C. O. Lawrence, Clanton.

The discussion will be opened by H. W. Waters, Opp, and J. V. Howell, Marion.

Recess

Second Day, Wednesday, April 17

Morning Session

Call to Order, 9:00 A. M.

1. The Treatment of So-Called Colitis in Infants and Children—

A. C. Gipson, Gadsden.

The discussion will be opened by E. M. Hyatt, Albertville, E. P. Moon, Wetumpka, and Vaughn Adams, Mobile.

2. Fracture Problems: With Lantern Slides—

Earle Conwell, Fairfield.

The discussion will be opened by F. L. Chennault, Decatur, and W. S. Britt, Eufaula.

3. Special Order for 10:30 A. M.

Trends of Medical Practice—

James S. McLester, President-Elect, American Medical Association, Birmingham.

4. For 11:00 A. M.—Jerome Cochran Lecture—

A Consideration of Tumors of the Breast—

George Henry Semken, New York City.

5. Some Observations on Retinal Detachment: With Lantern Slides—

Edward Nicholas DeWitt, Bridgeport, Conn.

The discussion will be opened by Job Cater, Montgomery, and H. B. Searcy, Tuscaloosa.

Recess

Afternoon Session

Wednesday

Call to Order, 2:00 P. M.

1. Some Little Known Manifestations of Allergy—

Marion T. Davidson, Birmingham.

The discussion will be opened by G. C. Kilpatrick, Mobile, and C. A. Grote, Huntsville.

2. Renal Calculi—

Edgar Burns, New Orleans.

The discussion will be opened by C. N. Lacey, Demopolis, and T. H. Street, Alexander City.

3. The Treatment of Severe Preeclampsia and Eclampsia with Ephedrine—

William B. McGee, New Orleans.

The discussion will be opened by A. E. Thomas, Montgomery, and E. R. Cannon, Vredenburgh.

4. Chronic Hoarseness—

C. Hal Cleveland, Anniston.

The discussion will be opened by S. Kirkpatrick, Selma, and B. B. Warwick, Talladega.

5. Ovulation, Menstruation, and Finding the "Safe Periods": With Lantern Slides—

Gilbert Douglas, Birmingham.

The discussion will be opened by H. B. Dowling, Mobile, and E. D. McAdory, Cullman.

To Dog River at 4 P. M.

Evening Session

Wednesday

PUBLIC MEETING

8:00 P. M.

1. Address—

Arthur McCormack, Louisville, Ky.

2. American Medical Association Movie—

Austin A. Hayden, Chicago

Last Day, Thursday, April 18

Morning

Call to Order, 9:00 A. M.

1. The Doctor and Life Insurance—
Cabot Lull, Birmingham.
The discussion will be opened by W. S. McElrath, Cedar Bluff, and R. L. Hill, Winfield.
2. Infections of the Hand—
John L. Branch, Montgomery.
The discussion will be opened by H. J. Sankey, Nauvoo, and Joel C. Chandler, Columbia.
3. 10:30 A. M. Business Meeting of the Association Sitting as the Board of Health of the State of Alabama.
 - (1) Report of the Board of Censors;
 - (2) Revision of the Rolls;
 - (3) Election and Installation of Officers.

ADJOURNMENT

PROGRAM

TENTH ANNUAL MEETING WOMAN'S AUXILIARY TO THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

THE BATTLE HOUSE, MOBILE
APRIL 16-17, 1935

OFFICERS

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Mrs. W. S. Armour.....Birmingham

Auditor

Mrs. A. N. T. Roach.....Mobile

Advisory Committee

Dr. E. H. Hargis

Dr. J. H. Dodson

Dr. G. W. Williamson

Tuesday, April 16

9:00 A. M. Registration at the Battle House

10:00 A. M. Meeting of the Executive Board at the Battle House—Mrs. F. H. Denson, Chairman, Presiding.

Wednesday, April 17

10:00 A. M.

BUSINESS SESSION

Mrs. F. H. Denson, President, Presiding.
Invocation—Rev. J. Hodge Alves, Jr., Mobile.
Greetings—Mrs. J. Leslie Taylor, Jr., Mobile.
Response—Mrs. Seale Harris, Birmingham.
Report of Credentials Committee—Mrs. I. M. Gravlee, Mobile.
Report of Program Committee—Mrs. R. P. Lester, Mobile.
Annual Report of Officers—
First Vice-President—Mrs. G. W. Williamson, Bessemer.
Second Vice-President—Mrs. Blue Harris, Montgomery.
Third Vice-President—Mrs. G. F. Douglas, Birmingham.
Fourth Vice-President—Mrs. W. E. Wilson, Russellville.
Recording Secretary—Mrs. A. M. Cowden, Mobile.
Corresponding Secretary—Mrs. J. R. Chandler, Bessemer.
Treasurer—Mrs. W. M. McKissack, Huntsville.
Historian—Mrs. W. S. Armour, Birmingham.
President—Mrs. F. H. Denson, Bessemer.
Annual Reports of Standing Committees—
Public Relations—Mrs. S. U. Newfield, Birmingham.
Press and Publicity—Mrs. L. W. Roe, Mobile.
Hygeia—Mrs. Alex Graves, Gadsden.
Program—Mrs. H. W. Allgood, Fairfield.
Lettie Daffin Perdue Fund—Mrs. E. S. Sledge, Mobile.
Revisions—Mrs. Clarence Weil, Montgomery.
Jane Todd Crawford Memorial—Mrs. J. R. Horn, Bessemer.
Annual Reports of County Auxiliaries—
Report of Meeting of Woman's Auxiliary to the Southern Medical Association, San Antonio, by Mrs. Sid Collier, Birmingham, Delegate.
Election of Officers—
Address—Mrs. J. Bonar White, President, Woman's Auxiliary to the Southern Medical Association.
Memorial Service—Mrs. George Waller, Bessemer, Chairman.
Prayer—Dr. Warner DuBose.
Adjournment.

Social Features

Details of these, which will include a tea, a luncheon, and a visit to the Bellingrath Gardens, will be announced from the floor of the assembly.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

IMPORTANT PENDING LEGISLATION

J. N. Baker, M. D.
State Health Officer

Note: Below is given a brief epitome and digest of some of the health measures already introduced into the legislature and of others likely to be introduced. All of these are matters which should be of vital concern to the profession. This synopsis will aid physicians in familiarising themselves with the contents of these bills so that they may discuss with and present their own views to their legislators before the legislature reconvenes on April 30th.

The first, or short, session of the present legislature began on January 8th and ended February 8th during which time was consumed fifteen of the fifty legislative working days allotted by the Constitution. While much still remains to be done, one has good cause to be hopeful that constructive thought and statesmanlike vision will be applied to many problems of an urgent nature yet unsolved but hinted at and dropped into the legislative hopper during this short session. A spirit of earnestness, of optimism, of constructive effort, and of team-work on the part of all of the members of the legislature and of both houses was everywhere apparent; which spirit, if preserved, may be confidently relied upon to lift our impoverished State to a measurably higher plane. In any first approach, consideration must be had, naturally, for revenue producing measures. During this legislative recess our people, through the ballot, will have voiced their views as to how the problem of alcohol shall be dealt with in this State. This decision will establish a base line of computation for what other, if any, additional revenues will be needed to adequately care for the State's expanding activities during the coming quadrennium. Also, during this interim, several important committees, created to give careful thought and study to these needs, will be in frequent session. Out of the deliberations of these recess committees should come concrete plans and suggestions

for the speeding up and perfecting of much important legislation yet uncompleted. For the past four years, the entire time of the three sessions of Alabama's legislature has been spent in devising ways and means of somehow carrying on, in the face of steadily shrinking revenues, without increasing the taxpayer's burden. As is well known, many worth-while activities, notably health and education, suffered cruelly as a consequence; and, but for the fortuitous coming of emergency Federal aid, both seemed threatened with collapse. In such circumstance, constructive planning for the future was quite beside the point and a hand-to-mouth existence was all there was to be had. The time has now come for the State and its subdivisions, with the Federal Government likely participating in a financial way, not only to think in terms of revamping present outmoded political structures and of their proper financing but also to adopt such progressive legislation as a rapidly changing social order demands.

Up to the present time and because of a world-wide financial debacle much legislation having far-reaching health aspects had to be postponed to a more opportune time. During the first session just closed, three important health bills were introduced and are now ready for final action when the legislature reconvenes on April 30th. These bills deal respectively with: (a) sterilisation of the heritable unfit; (b) control of rabies within the State; and (c) state aid to counties in caring for their tuberculous. All three are of such vital concern, both to our citizens and to the medical profession, that it behooves the members of the latter group to so familiarise themselves with the provisions of each bill as to be in position to sanely advise, as well as furnish the leadership necessary for their enactment into law. With this thought in mind there is presented below a brief outline of the salient features embraced in each bill.

STERILISATION BILL
(House No. 87)

This bill, carefully thought out and drafted by Dr. W. D. Partlow, was simultaneously introduced into the Senate by Mr. Tucker and into the House by Mr. Dominick, both of Tuscaloosa.

The caption of the bill runs as follows:

"To authorize and provide for the sterilization of particular types of mental disease, insane, epileptic, mentally deficient, criminal and delinquent persons in the State of Alabama, to provide and define method of obtaining authority in each case and by whom authority is to be granted, to define and name method of sterilization and to designate by whom expenses of such sterilization are to be borne, and protecting against civil or criminal prosecution persons legally participating in the execution of the provisions of this Act."

Sections one and two of the Act provide for the sterilisation, before return to civil life, of any inmate of the State Hospitals for the Insane or Feeble-Minded, if, in the opinion of the Superintendent of such hospitals, the mental disease of such inmate is heritable or transmissible.

Section three sets up the machinery whereby a sexual pervert, such as a sadist, homosexualist, masochist, sodomist or a prisoner twice convicted of rape may be rendered unfruitful. The safeguards here provided for the individual are a medical board composed of the Superintendent of the State Hospitals for the Insane, the Chief Medical Officer of the Convict Department, and the State Health Officer coupled with an approval order signed by the Governor that sterilisation be performed.

Section four provides for sterilisation of the "repeating criminal" (three or more times) or recidivist, utilising the same medical board as provided in section three above and only upon approval of an order issued by the Governor.

Section five makes provision whereby an inmate of a state, county, or municipal reformatory school, when afflicted with an heritable mental disease, may be rendered sterile. The medical machinery here made use of is the Board of Censors of the County Medical Society (County Committee of Public Health—commonly known as County Board of Health) whose decision in each case must be approved by the Superintendent of the State Hospitals for the Insane

with the right of the parent or guardian to make appeal to a board of medical experts composed of the Superintendent of the Hospitals for the Insane and two members of his staff whose decision, if unanimous, shall be final. In case of appeal, the individual involved has a right to be represented by attorneys, physicians or any one else of his or her selection.

Section six makes provision, through the same machinery as provided in section five and with the same right of appeal, whereby any person habitually and constantly dependent upon public relief or support by charity, whose dependency is due to an heritable or transmissible disease, may be rendered sterile and the expenses incurred to be defrayed out of county funds.

Section seven defines the term sterilisation which, in the male, means bilateral vasectomy or resection of the vas deferens and, in the female, bilateral resection of the fallopian tubes or oviducts.

Section eight provides that the necessary expenses incurred in effecting sterilisation of institutional persons shall be defrayed by each institution, whether state, county, or municipal.

Section nine provides that nothing in the Act is to be construed as authorising the rendering unfruitful of any normal healthy individual.

Section ten provides that no physician, surgeon or any other person or persons participating in the enforcement of this Act shall be liable to either civil or criminal prosecution in connection therewith.

A careful perusal and study of this Act reveals that biologically and medically it is sound and is entitled to the support of all who hope to see Alabama kept in the vanguard of social progress. Below are given the State Health Officers' comments when the bill was introduced:

All legislation seeking to deal with eugenics and sterilisation should rest upon a scientific bedrock of biology and medicine. The basic thought embodied in all eugenic principles is not new; it is that the breed of man, like the breed of animals or of plants, may be improved by conscious selective processes. Early Chinese literature carries this thought, and the preachments of the Greek philosopher, Plato on this topic are well known. The mass of experimental work done in the realm of pure biology by such lucid thinkers as Darwin, Mendel and others, coupled with the marked strides

made by modern scientific medicine, afford surer ground upon which legislators may build. Beyond all doubt, the urge to consciously and deliberately improve the human stock, at least through a negative approach by elimination of the heritable unfit, is here to stay and constitutes one of the major sociologic and economic problems of this and future generations. Already some twenty-seven states of the Union have on their statute books some sort of laws dealing with human sterilisation, and the probabilities are that this number will be pronouncedly increased during the present year because of the fact that almost all state legislatures will hold sessions at some time during 1935. In sterilisation activities and interests, California tops the list with 8,504 operations having been performed to January 1933. With bated breath, the entire civilised world is watching the bold experiment in mass sterilisation recently launched by Germany. It is estimated that some 400,000 of the population will come within the scope of this law, the larger portion of whom fall into that group classed as inborn feeble-mindedness. One is struck by the naive psychology employed in the phrasing of this German law by the studied substitution of the euphonious phrase "render unfruitful" for the more technical and unlovely word "sterilise"; however, it should ever be borne in mind that none of the procedures advocated or employed to render human beings unfruitful or sterile interfere in the least with the normal sex life of the individual. The estimated cost to the German Government per operation for the male is twenty marks (\$7.60) and for the female fifty marks (\$19.00); the cost of sterilisation of 400,000 human beings, therefore, is estimated at some 14,000,000 marks (\$5,320,000) as contrasted with the present stupendous annual cost of the hereditary sick of three hundred and fifty million marks (\$133,000,000). It is estimated that, after several decades, hundreds of millions of marks will be saved each year as a result of the diminution of expenditure for patients with hereditary diseases.

The enormity of this problem for each and every state in the Union is attested by the steady and disquieting increases in all types of mental disease. Experts in this field conservatively compute that some four per cent of our entire population will, at some period in their lives, require institutional care for some form of mental disease. It is gratifying to note that Alabama is no longer to be a laggard in this regard; for one of the early bills to be introduced into the 1935 legislature was by Senator Tucker, of Tuscaloosa, dealing in a sane, sound, yet broad manner with this problem as it pertains to Alabama. It is peculiarly gratifying that, in the shaping of this legislation, he has seen fit to lean heavily upon the medical profession for guidance. In the practical application of any legislation evolved, if it is to incorporate sound biologic and medical principles and to prove ultimately successful, free use must be made of the storehouse of information and of the trained personnel of this profession to which must be delegated the final word both in execution and in decision of each and every case.

DIGEST OF RABIES BILL
(House No. 78)

The caption of this bill reads as follows:

For the protection of human beings against rabies; to prescribe the licensure and inoculation against rabies of dogs in incorporated communities and rural areas of the State and to provide for the establishment of dog pounds, the apprehension of unlicensed dogs, the confinement of bitten dogs and of dogs which have bitten humans, to provide for the enforcement of this Act in unincorporated communities and other political subdivisions, and to fix penalties.

Modern society now universally recognises and accepts the dictum that community interests transcend those of the individual; and, furthermore, that each individual, as a member of the community, must carry his share of the responsibility and burden of affording protection to the group. These basic principles are sound and furnish ample justification for the legislation incorporated in the Act recently introduced to curb rabies, both human and canine, in this State.

Rabies has increased at an alarming rate during the past few years. The following figures illustrate this point quite forcefully.

Year	Animal		Human Treatments Distributed
	Heads Examined	Found Positive	
1930.....	1,054	443	1,791
1931.....	1,202	589	2,679
1932.....	1,615	779	3,697
1933.....	1,520	693	3,620
1934.....	2,353	1,017	5,514

From the above it will be seen that 5,514 citizens of Alabama were subjected to the treatment in 1934. If these treatments were purchased on the open market at the lowest bid price, they would have cost the State of Alabama \$38,598.00. As a matter of fact, they were produced by the State Department of Health and distributed without cost.

Since the dog is the chief factor in the spread of rabies, control measures should be instituted against this animal. This proposed bill is not designed as a revenue producer. It is merely a regulatory measure and every effort has been made to keep the cost at a minimum for the dog owner. The ultimate aims were: (1) the reduction of the stray dog population of Alabama; (2) the protection of the remaining dogs in so far as possible by vaccination;

(3) prevention of the spread of rabies to other livestock (many valuable animals succumb to this disease each year); (4) of greatest importance, however, is the prevention of spread of rabies to human beings (three persons died from rabies last year).

The following are the salient features of the bill:

1. The compulsory vaccination and licensure of all dogs is mandatory in all counties and municipalities. The fee for the license shall not exceed fifty cents and may be fixed lower.

2. Provision is made for the confinement of dogs suspected of having rabies and also of those which have bitten human beings.

The Act specifically provides that all fees collected shall be applied to its enforcement and for no other purpose.

STATE SUBSIDY TO COUNTY TUBERCULOSIS
SANATORIA
(House No. 64)

While it is true that Alabama possesses one of the nation's most efficient machines for conducting health work on a state-wide and county-wide basis, it is also true that she is lagging far behind, in so far as the big specific problem of tuberculosis is concerned. This statement holds true, when comparison is made with other Southern States, such as Georgia and Mississippi, to say nothing of what the more wealthy Eastern States have been and are doing. The reason for this apparent lag is simple. Twenty-five years ago when the warfare against tuberculosis began in earnest throughout the United States, Alabama, while not unmindful of its tuberculosis problem, had first to concentrate its then puny health forces on three giant enemies to mankind—hookworm, typhoid and malaria—which were strutting rampant over the State. Now, these have, in large measure, been brought under control and the time has come to direct our efforts in an earnest and definite way to tuberculosis—a disease which now ranks third as a cause of death in Alabama, and which annually claims more than 2,000 victims. Because of the present impoverished plight of Alabama's finances and for other reasons, the

health department does not deem it wise, at present, to sponsor a program of state-owned and state-operated institutions for its tuberculous. Following through with the concept that tuberculosis is primarily and essentially a community responsibility Alabama's plan seeks to encourage the building of smaller sanatoria to serve counties or contiguous counties, with the State participating in their financial upkeep and, through its central health department, aiding in their general supervision and direction. Such a bill was passed by the legislature of 1931, but the financial provisions of the Act were abrogated during the extra session of the 1932 legislature. An amendment to this bill (House Bill 64 by Representative Street) has already been introduced, which seeks to restore this state aid to counties on a per diem basis of each case cared for in such institutions. The amount allowed by the State for each case is fifty per cent of the per capita cost of caring for patients, but is not to exceed seventy-five cents per diem per patient to any institution. To meet this obligation on the part of the State, the amendment provides for an appropriation from the State Treasury of \$75,000 for the first year; \$100,000 for the second year; \$125,000 for the third year and \$150,000 for the fourth year and thereafter a continuing sum of \$150,000 or so much thereof as may be necessary.

The Federal program for the spending of large sums to relieve unemployment includes, among other things, hospitals or sanatoria to serve municipalities and counties and it would seem that the time is most opportune for having erected many such county or district sanatoria. Our present Governor is most sympathetic both with such a building program and with the legislation proposed for state aid. In truth, such an opportunity is not likely to present again for making a substantial beginning in the control of tuberculosis throughout the State. The need for this state aid to the counties for the maintenance of such sanatoria is so urgent that the hope is expressed that the legislators will promptly make provision for it.

LIEN BILL

While this bill has not yet been introduced into the legislature, because of more

urgent things taking precedence, it has been prepared, and will be introduced after the recess period. The caption of this bill sets forth its purport and reads as follows:

To provide for and create a lien in favor of practitioners, nurses and hospitals, upon any money which is or shall become the proceeds of a claim or right of action by a person who has suffered personal injuries or bodily ailment as the result of an accident or by accidental means whether caused by himself or another person, such lien to extend to the indemnity or insurance of such other person, who is treated or accepts personal service, board, lodging, medical and surgical supplies from such practitioner, nurse or hospital. To provide the method and means of perfecting such lien and to provide the method and means of enforcing such lien.

A former President of the Association, Dr. S. Kirkpatrick, of Selma, has been much interested in this question and assumed the responsibility of working out, with the aid of legal guidance, a suitable bill which is designed to give protection to hospitals, doctors and nurses when called upon to render service in accidents and emergencies. While the phraseology of this bill so abounds in legal technicalities as to quite defy comprehension on the part of the State Health Officer, he feels safe, because of its sponsor, in commending it to the medical profession as worthy of their support and as a step forward in the correction of many injustices for which formerly there has been no redress.

COMPENSATION OF STATE OFFICIALS AND EMPLOYEES

During the short session of the legislature only emergency measures needed by the Governor had the right-of-way and were enacted into law. All questions pertaining to appropriations and revenues have been held in abeyance pending a decision by the voters as to how alcohol shall be dealt with and what revenues might be anticipated from this source. Consequently, no consideration has, as yet, been given by the legislature to the hardships dealt, in a financial way, to most state officials and employees by the drastic provisions of the Harrison salary cutting bill enacted on the last day of the second extra session. This bill mowed down to a ridiculous minimum the salaries of many official heads of important State Departments and reduced by thirty per cent the salaries of all employees

earning more than \$100. This provision holds until modified or lifted through legislative action. During the depression the Federal Government applied but a 15 per cent reduction, two thirds of which has long since been lifted and the remaining 5 per cent will be removed July 1, 1935. Within the past two years the cost of living has mounted at least 20 per cent. In the face of these indisputable facts, should not proper consideration be given to these inequities dealt state employees? To the State Health Officer particularly this is a matter of serious concern, for the reason that a large proportion of his personnel has to be professionally or technically trained in definite fields of public health activities. The demand from other states for men qualified and experienced in these special fields is considerable. The consequence is a natural and inevitable one; in the absence of some assurance that compensation commensurate with that which other similar agencies are offering elsewhere, much of the more experienced personnel throughout the entire health organization is being forced to think in terms of improving their present status. Already this is happening to a disquieting degree. The physicians of the State are in position to appreciate the force of the above statement as well as the absolute need for having the health department manned with trained and efficient personnel. It is felt that, during the recess period, physicians can render a valuable service to their health department by bringing to the attention of their own Representatives and Senators the real need for giving relief to the present drastic provisions of the Harrison Bill, which will remain in force until remedied through legislative enactment.

It is heartening to be able to record the presence, in this legislature, of six members of the profession. Dr. W. A. Parrish, Midland City, representing Dale and Geneva Counties, is Chairman of the Public Health Committee of the Senate. Dr. L. A. Weaver, representing Lauderdale and Limestone Counties, is a member of the Committee. In the House, Dr. T. H. Street, Alexander City, is Chairman of the Committee on Public Health. Dr. W. C. Miles, Oneonta, is Vice-Chairman. Other committeemen are Drs. W. C. Braswell, Elba, and R. L. Hill, Winfield. Dr. Hill is also a member of the recess Committee on Finance and Taxation.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.,
State Health Officer in Charge

REGARDING GILLILAND PRODUCTS

To the Secretaries of all County Medical Societies.

To all County Health Officers.

Dear Doctors:

On February 2nd the following Associated Press dispatch appeared:

"SECOND ARREST IN DIPHTHERIA ANTITOXIN FRAUD PROBE"

"Harrisburgh, Pa., Feb. 2.—Arrest of two men on charges of conspiracy in distributing "deteriorated and ineffective" antitoxin for charity use sent the state on a weird search through its records of diphtheria deaths today. Roy G. Miller, veteran chief of the biological products division of Pennsylvania's department of health, furnished bail last night and Dr. E. K. Tingley, veterinarian and president of the Gilliland Laboratories of Marietta, Pa., which sells its products to seven states, was arrested today."

Since the Gilliland Laboratories supply biologicals on contract to the State Department of Health, this matter was taken up immediately with Dr. G. W. McCoy, Director of the National Institute of Health. The licensure of all establishments producing biological products for interstate shipment and the control of these products is delegated by the Federal government to the National Institute of Health, and the officials of the U. S. Public Health Service have the authority to revoke licenses and withdraw from the market any biologicals considered unsatisfactory.

Dr. McCoy, in a letter dated February 9th, made the following statement:

"I have just returned from Pennsylvania and elsewhere in connection with the investigation of the incident in Pennsylvania involving the Gilliland Laboratory. I found nothing that would justify me in recommending to my superiors any action whatever regarding the Gilliland Laboratory, and it is my opinion that all of the antitoxin distributed has been up to the labelled unitage. I am quite certain there is no specific evidence that the antitoxin has been deficient in any respect."

Furthermore, samples from every lot of diphtheria antitoxin on hand at present in

the State Department of Health have been submitted for examination to the National Institute of Health. The results of these tests were entirely satisfactory.

In view of the statement of Dr. McCoy quoted above, as well as other information at its disposal, the State Department of Health thus far has no reason to believe that the diphtheria antitoxin furnished by the Gilliland Laboratories is deficient or below standard. Should any future investigations disclose facts which would warrant a modification or change of the views expressed above, the profession of the State will be promptly advised.

It is requested that the members of your County Medical Society be acquainted with the contents of this communication.

Feb. 13, 1935.

Very sincerely yours,
J. N. BAKER, M. D.,
State Health Officer.

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

THE EXAMINATION OF SPUTUM FOR TUBERCLE BACILLI

The microscopic examination of suspected sputum is the method most commonly employed in public health laboratories for the diagnosis of pulmonary tuberculosis. A positive finding is reported if acid-fast bacteria which resemble morphologically the tubercle bacilli are found. Routinely, cultural methods are not employed; hence, the final diagnosis, so far as the laboratory is concerned, rests on the demonstration of bacteria which retain the original carbolfuchsin stain after decolorization with acid alcohol.

Baldwin, Petroff and Gardner¹ state that "the demonstration of tubercle bacilli in the sputum is one of the most valuable diagnostic measures in medicine." The general opinion has been expressed by Miller²

1. Baldwin, E. R., Petroff, S. A., and Gardner, L. S.: Tuberculosis, Bacteriology, Pathology and Laboratory Diagnosis. Lea & Febiger, Philadelphia, 1927.

2. Miller, J. A.: Pulmonary Tuberculosis, Clinical Aspects. Nelson Loose-Leaf Living Medicine. Thomas Nelson & Sons, New York. 1929.

that "the demonstration of *tubercle bacilli* in the sputum is the absolute and unimpeachable evidence of the presence of pulmonary tuberculosis." However, when microscopic examination is relied upon solely, there are certain errors which are inherent in the method itself and which must always be considered.

In the first place, the genus *Mycobacterium*, which includes the human, bovine and avian types of the tubercle bacillus, has also a number of other members. Some of these, like the leprosy bacillus, are pathogenic and some, like the butter bacillus, are saprophytic as far as is known. Furthermore, there are undoubtedly other species which have not, as yet, been recognized. A recent report by Cummins and Williams³ describes an acid-fast organism which was isolated from a patient with acute pulmonary disease. In the sputum this bacillus was scarcely distinguishable from the tubercle bacillus but its arrangement in peculiar "ball-like" clumps raised a question. Cultural methods were used with the result that it was found not to be the tubercle bacillus. How often a circumstance like the foregoing occurs is unknown but it emphasizes the importance of culture in doubtful cases.

Frequently wood fibers, food particles, crystals or scratches on the slide may to some degree resemble the tubercle bacillus because they retain the fuchsin stain. However, it is a general rule in the Bureau of Laboratories never to call a slide positive when only one or two suspicious organisms are found. Their numbers and characteristic arrangement are always taken into account.

Another source of error is introduced when improper containers are used for the collection of specimens of sputum. Holman⁴ has demonstrated that any organism may become acid-fast if it is coated with petrolatum or other similar substances. Many samples have been received by the Bureau of Laboratories in vaseline bottles and always in such cases there is an ele-

ment of doubt if a positive finding occurs. Milk bottles are objectional because they may at times contain the bovine tubercle bacillus. The correct specimen container can be obtained from the Bureau of Laboratories and it is most advisable that it be used at all times.

No laboratory test is one hundred per cent accurate, all being subject to certain inherent errors. Constant refinements improve their efficiency but there will always remain a low percentage of inaccuracy. For this reason a series of tests on any case in which there is an element of doubt should always be run. It is customary, when a patient with doubtful clinical and roentgen ray findings is suspected of pulmonary tuberculosis, to make repeated microscopic examinations. If a positive result is not obtained, culture or animal inoculation is resorted to because these tests often demonstrate the bacteria when they are present in too few numbers to be seen microscopically. A method recently described by Holmes,⁵ if corroborated, should do much to improve our present culture technique. Likewise, if clinical and x-ray findings do not check with a single positive microscopic result, further examinations are indicated.

BUREAU OF VITAL STATISTICS

L. V. Phelps, Director

Recorded and Resident Death Rates From Tuberculosis (All Forms) According to County and Color, 1929-1934, Alabama

Recorded death rates from tuberculosis (all forms) were given in tabular form in the January 1935 issue of this Journal. They were based upon the number of deaths actually occurring in each county, regardless of whether the decedent was a resident of the county.

It is well known that many non-resident deaths occur in certain counties. This is usually due to comparatively superior hospital facilities. In counties where large federal or State institutions are located, the number of non-resident deaths is an important factor and may effect the recorded rate to such an extent that an erroneous

3. Cummins, S. L. & Williams, E. M.: An "acid-fast" other than Koch's bacillus cultivated from sputum, *Tubercle* 15, 49-52, 1934.

4. Holman, W. L.: Error in acid-fast and gram staining due to petrolatum, *Arch. Path.* 1: 390-393, 1926.

5. Holmes, E.: The value of culture in the solution of problems of tuberculosis, *J. State Med.* 42: 559-574, 1934.

picture of the mortality is given. This fact is shown by observing the rates in Macon and Mobile Counties.

The attached table will afford a comparison of the recorded and resident death rates by county and color for 1934, and the mean annual death rate for the quinquennial period, 1929-1933.

The following counties had resident death rates for the white population of seventy-five per 100,000 or more: Choctaw and Lauderdale. For the colored popula-

tion those counties having resident death rates of 100 or more per 100,000 population were as follows: Bullock, Calhoun, Colbert, Conecuh, Etowah, Greene, Jackson, Jefferson, Lawrence, Limestone, Madison, Marion, Mobile, Montgomery, Pickens, Shelby, St. Clair, Talladega, Tuscaloosa, and Washington.

It will be noted from the table that, regardless of color, the tuberculosis belt in Alabama is in the northern half of the State in the Tennessee Valley.

MEAN ANNUAL RECORDED AND RESIDENT DEATH RATES PER 100,000 POPULATION FROM TUBERCULOSIS (ALL FORMS) BY COUNTY AND COLOR (1929-1933) AND ANNUAL RATE FOR *1934: ALABAMA

Counties	TOTAL				WHITE				COLORED			
	1929-1933		*1934		1929-1933		*1934		1929-1933		*1934	
	Recorded Rate	Resident Rate	Recorded Rate	Resident Rate	Recorded Rate	Resident Rate	Recorded Rate	Resident Rate	Recorded Rate	Resident Rate	Recorded Rate	Resident Rate
Entire State	81.4	78.7	62.0	60.7	45.8	46.1	38.5	38.2	145.4	137.4	104.3	101.2
Autauga	55.6	59.6	59.9	59.9	24.9	27.2	22.4	22.4	80.3	85.7	90.2	90.2
Baldwin	41.1	43.8	54.1	54.1	36.0	38.7	54.5	54.5	57.1	59.9	52.8	52.8
Barbour	54.8	58.5	33.8	33.8	24.6	27.5	7.2	7.2	77.1	81.4	53.4	53.4
Bibb	56.8	63.5	33.7	38.5	30.2	34.5	14.4	14.4	110.5	122.2	72.7	87.2
Blount	57.2	57.9	34.4	44.8	54.3	54.3	35.8	42.9	130.1	148.7		90.6
Bullock	95.9	101.9	84.9	94.9	23.4	23.4	46.9	70.4	115.5	123.3	95.2	101.6
Butler	77.9	84.6	49.2	52.5	39.8	42.4	31.9	31.9	118.2	129.1	67.5	74.3
Calhoun	85.6	87.7	73.1	73.1	57.0	57.9	41.7	39.5	183.9	190.2	180.5	188.0
Chambers	63.6	69.2	35.6	40.7	40.2	42.1	18.7	18.7	91.5	101.5	55.8	66.9
Cherokee	51.4	52.4	54.4	54.4	48.9	48.9	54.4	54.4	76.5	87.4	54.6	54.6
Chilton	40.3	43.6	19.7	19.7	25.0	27.9	23.5	23.5	120.2	125.2		
Choctaw	82.9	85.8	53.6	63.4	43.1	43.1	75.5	86.3	115.6	121.0	35.6	44.5
Clarke	66.9	71.5	61.5	53.8	22.6	22.6	32.3	16.1	107.2	116.0	88.1	88.1
Clay	38.3	40.5	22.5	33.8	27.9	29.2	26.6	39.9	95.6	103.0		
Cleburne	49.7	51.2	38.8	46.6	42.9	44.6	41.3	49.6	156.0	156.0		
Coffee	21.9	22.5	14.9	14.9	13.1	13.1	15.1	25.1	54.6	57.4	14.0	14.0
Colbert	93.1	99.1	83.7	83.7	51.4	56.1	60.8	60.8	198.1	207.5	141.5	141.5
Conecuh	55.6	56.4	58.2	58.2	13.9	15.3	20.6	20.6	109.6	109.6	106.8	106.8
Coosa	48.2	51.4	8.0	8.0	23.0	23.0			90.5	99.1	21.6	21.6
Covington	22.5	24.9	25.8	23.4	18.5	18.5	31.1	28.2	42.0	56.0		
Crenshaw	52.2	53.9	25.1	33.4	25.6	25.6	12.1	24.2	111.8	117.3	54.1	54.1
Cullman	52.8	55.2	56.3	56.3	52.9	55.3	56.9	56.9	43.3	43.3		
Dale	32.7	34.4	17.1	21.4	21.3	22.4	16.8	16.8	70.2	73.9	18.3	36.6
Da'las	98.3	93.2	77.8	79.6	35.2	31.0	35.1	28.0	120.2	114.8	92.7	97.6
DeKalb	55.9	58.3	49.4	54.2	52.6	54.6	50.5	55.3	210.2	233.5		
Elmore	99.3	90.8	48.8	48.8	39.9	41.9	27.8	27.8	183.4	160.0	78.6	78.6
Escambia	15.4	43.9	39.7	43.0	22.1	23.1	38.8	38.8	98.2	107.3	41.5	51.8
Etowah	86.3	86.3	64.2	68.5	63.5	61.3	45.7	47.4	208.5	220.2	163.6	181.8
Fayette	31.4	33.6	27.1	27.1	31.6	34.1	18.9	18.9	30.3	30.3	75.7	75.7
Franklin	51.2	52.0	29.9	33.6	43.7	44.5	27.7	31.7	172.7	172.7	66.7	66.7
Geneva	29.1	31.8	9.8	13.1	21.3	22.8	7.6	11.3	82.1	92.4	25.3	25.3
Greene	95.3	98.3	93.1	93.1	11.4	28.4	55.4	55.4	113.2	113.2	101.2	101.2
Hale	68.7	70.9	44.3	44.3	26.0	28.9	28.3	28.3	83.7	85.8	50.0	50.0
Henry	43.5	44.4	21.4	30.0	20.2	20.2	16.2	16.2	68.5	70.4	27.2	45.3
Houston	34.5	35.3	28.3	28.3	18.7	19.3	8.6	8.6	72.3	73.8	75.6	75.6
Jackson	73.5	76.7	56.3	59.0	66.5	69.4	37.6	40.5	162.9	170.3	293.8	293.8
Jefferson	101.2	101.4	80.1	82.1	43.5	43.4	36.3	37.0	191.8	200.3	148.6	152.7
Lamar	47.8	48.9	22.2	22.2	39.6	39.6	13.2	13.2	91.4	98.4	70.3	70.3
Lauderdale	91.0	92.0	79.0	81.4	68.0	68.6			189.5	192.1	38.0	38.0
Lawrence	101.2	104.9	78.5	78.5	73.6	75.5	67.7	67.7	179.2	187.6	108.9	108.9
Lee	80.4	80.4	24.1	26.8	46.3	43.7	5.5	5.5	109.2	111.4	41.5	46.7
Limestone	93.4	97.6	77.3	79.8	81.9	84.1	67.2	67.2	123.8	133.6	104.2	113.6
Lowndes	90.9	90.0	65.6	74.3	24.6	30.8	30.8	30.8	101.9	99.8	71.3	81.5
Macon	430.7	95.2	206.5	59.5	32.8	28.7			516.3	109.4	250.9	72.3
Madison	117.1	119.8	67.0	68.4	86.9	89.9	44.7	46.7	188.4	190.4	119.6	119.6
Marengo	75.1	83.4	35.5	35.5	15.8	15.8	19.8	19.8	97.8	109.2	41.5	41.5
Marion	46.9	48.4	25.4	29.0	47.7	49.3	26.2	26.2	22.9	22.9		109.8
Marshall	62.9	64.4	53.8	56.1	59.4	61.0	53.2	55.6	169.1	169.1	70.9	70.9
Mobile	108.0	84.4	111.2	87.4	53.9	51.6	47.0	44.5	205.3	143.6	226.3	164.2
Monroe	54.9	60.2	45.8	32.7	25.1	29.3	27.6	20.7	81.9	88.2	62.2	43.5
Montgom'y	82.3	85.1	63.2	70.7	37.7	37.7	24.0	28.0	122.1	127.4	98.0	108.7
Morgan	88.6	89.9	32.6	30.5	73.6	74.6	27.3	24.8	157.0	159.4	56.5	56.5
Perry	85.2	92.0	56.0	63.4	44.0	49.6	40.8	68.1	100.8	108.1	61.7	61.7
Pickens	103.6	101.2	84.3	88.3	30.8	29.3	7.7	7.7	182.7	179.3	169.0	177.5
Pike	61.3	61.9	43.1	46.2	25.9	25.9	16.8	22.4	104.3	105.7	75.1	75.1
Randolph	42.4	43.9	22.3	22.3	33.4	35.3	14.3	14.3	74.8	74.8	51.0	51.0
Russell	87.0	93.6	61.2	70.0	49.8	59.7	67.1	67.1	105.6	110.6	57.4	71.8
Shelby	79.6	84.0	86.4	86.4	52.3	54.2	57.8	57.8	160.2	171.6	170.8	170.8
St. Clair	66.5	73.0	60.0	64.0	47.5	50.5	44.9	49.8	144.2	164.8	121.9	121.9
Sumter	101.9	101.1	54.6	54.6	17.5	17.5			124.4	123.5	50.7	50.7
Talladega	93.5	98.8	76.6	80.8	41.5	46.4	48.0	51.4	178.8	184.5	123.5	129.1
Tallapoosa	45.4	48.6	47.2	50.3	19.5	22.3	32.1	36.6	102.0	106.1	80.4	80.4
Tuscaloosa	103.6	83.8	92.0	59.9	81.0	52.0	37.4	37.4	148.3	146.5	99.9	104.3
Walker	70.4	73.4	55.2	56.8	57.8	59.8	51.9	51.9	153.5	163.7	76.6	89.3
Washington	51.7	55.4	63.8	63.8	39.2	43.3	19.9	19.9	69.4	72.3	125.5	125.5
Wilcox	102.1	106.9	64.3	68.3	28.8	36.0			123.2	127.3	82.8	88.0
Winston	43.2	43.2	12.4	12.4	43.4	43.4	12.5	12.5				

*PROVISIONAL RATES. Blank spaces indicate no deaths.

BUREAU OF PREVENTABLE DISEASE CONTROL

D. G. Gill, M. D., Director

MAY DAY AND DIPHTHERIA

Each year the American Child Health Association selects an outstanding problem in child health as the general message for May Day. This year diphtheria, one of the worst enemies of childhood, has been chosen and the doctrine of immunization against this disease will be broadcast to the parents of the whole country.

The medical profession, of course, has an important part to play—the key part—in the whole program. Without the active backing of all practising physicians the program cannot be successful and diphtheria will continue to enact its toll of young lives.

Throughout the country, as a whole, diphtheria morbidity and mortality have been practically stationary since 1930 in spite of the means available to wipe it out entirely. In Alabama, where the most recent and most efficient weapon, in the form of alum-precipitated toxoid, was developed, the trend of the disease has not been greatly affected. The number of cases of diphtheria reported in Alabama for the past ten years is shown below.

1925.....	1296	1930.....	1595
1926.....	1584	1931.....	2198
1927.....	2527	1932.....	1888
1928.....	2183	1933.....	1572
1929.....	1800	1934.....	1579

The health departments will do their part in educating the public to the need of protection, but if each physician would take the responsibility of seeing that every baby delivered by him is properly protected a great forward step would be made. The ideal time of immunization is during the second half of the first year of life, about the time that the immunity received in utero is lost. The immunity conferred by a single dose of the alum-precipitated toxoid develops rapidly and in approximately 95% of children the one injection is all that is necessary. In a small percentage of children a second injection is necessary, but this can be determined by a Schick test 3-6 months after the original injection. The dangerous age, as revealed by death certifi-

cates, is the preschool period, with the ages 2-4 being responsible for the greatest number of deaths.

Alabama has the unenviable record of having almost twice the diphtheria death rate of the country as a whole—a condition that can only be corrected by wholesale immunization. Let us join in the May Day program this year and make this a continuing program throughout the years.

IMPORTANT MAXIMS WORTH FOLLOWING IN THE TREATMENT OF EARLY SYPHILIS

1. Make the first dose of neoarsphenamine half the ordinary adult maximum dose.
2. Take age, weight, and sex into account. Women two-thirds the dose for men.
3. Adult dose of neoarsphenamine is usually 0.6 gram.
4. Never end a course with neoarsphenamine. Always end with bismuth.
5. Treatment should be continuous. Intermittent treatment is disastrous from the standpoint of a "cure." Irregularity leads to relapse, fixed positiveness and failure. Length of treatment should be at least eighteen months.
6. Never dismiss a patient as cured. Examine frequently the blood, mucosae, and skin in the first two years after treatment starts.
7. Blood Wassermann every month, or every other month, during the no treatment period.

Milk Consumption—Despite the fact that modern science has demonstrated in a long series of brilliant investigations that milk is indispensable to adequate human nutrition, and that the dietary qualities of dairy products surpass those of practically all other foods, the average American consumes too little milk. In 1933, the annual per capita consumption of fluid milk and cream was only 38.8 gallons, or 0.85 pint, a day. Sectionally, some parts of the United States are much worse off in this respect than are others. In the South Atlantic and South Central states, the daily average is only about 2/3 pint a day, whereas in the North Atlantic states, nearly 1 pint of milk was taken by each person every day. In the Western and North Central states the daily quantity of milk consumed was about the same as the average for the whole country.—*Tobey, Am. J. Pub. Health, Feb. '35.*

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE
DISEASES IN ALABAMA

	Dec. 1934	Jan. 1935	Esti- mated Ex- pectancy January
Typhoid	32	7	33
Typhus	22	11	6
Malaria	290	76	55
Smallpox	7	12	51
Measles	475	687	276
Scarlet Fever	109	78	122
Whooping cough	207	172	131
Diphtheria	135	75	163
Influenza	738	3120	691
Mumps	77	75	127
Poliomyelitis	1	3	3
Encephalitis	0	4	2
Chickenpox	248	475	189
Tetanus	3	6	4
Tuberculosis	193	191	234
Pellagra	58	19	16
Meningitis	8	7	8
Pneumonia	422	647	437
Syphilis (private cases)	404	267	133
Chancroid (private cases)	6	3	7
Gonorrhea (private cases)	181	146	154
Ophthalmia neonatorum	2	0	2
Trachoma	2	0	0
Tularemia	0	1	1
Undulant fever	3	0	1
Dengue	23	3	0
Amebic dysentery	1	0	0
Rabies—Human cases	0	0	0
Positive animal heads	64	165	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

ALABAMA, DECEMBER 1934

Int. List Numbers (1929 Revision)	CAUSES	Number of Deaths			*Death rate per 100,000 Population	
		Total	White	Colored	1933	1934
	ALL CAUSES	2823	1584	1239	†11.5	†12.0
1, 2	Typhoid fever	14	7	7	1.7	6.0
3	Typhus fever	1		1	1.3	0.4
6	Smallpox					
7	Measles	18	9	9	1.7	7.6
8	Scarlet fever	1	1		1.7	0.4
9	Whooping cough	22	10	12	7.3	9.4
10	Diphtheria	23	18	5	10.7	9.8
11	Influenza	98	54	44	42.1	41.6
107-109	Pneumonia, all form	276	162	114	105.7	117.3
16	Poliomyelitis	1	1		0.4	0.4
22	Tetanus	2	1	1	0.4	0.8
23-32	Tuberculosis, all forms	165	80	85	70.5	70.1
23	Tuberculosis, pulmonary	156	75	81	64.9	66.3
38	Malaria	18	9	9	7.7	7.6
45-53	Cancer, all forms	123	86	37	63.6	52.3
59	Diabetes mellitus	31	22	9	11.6	13.2
62	Pellagra	26	16	10	12.5	11.0
82	Cerebral hemorrhage, apoplexy	175	100	75	73.9	74.4
90-95	Diseases of heart	402	267	135	145.6	170.9
	Diarrhea and enteritis					
119	Under 2 years	29	15	14	13.7	12.3
120	Two years and over	14	11	3	6.0	6.0
130-132	Nephritis	193	104	89	83.8	82.0
140-150	Puerperal state, total	35	23	12	12.5	14.9
140-145	Puerperal septicemia	14	10	4	2.6	6.0
157	Congenital malformations	13	10	3	10.3	5.5
158-161	Congenital debility and other diseases of early infancy	112	71	41	67.0	47.6
162	Senility	56	17	39	12.5	23.8
163-171	Suicides	17	16	1	8.6	7.2
172-175	Homicides	64	18	46	36.1	27.2
176-198	Total accidental causes	183	125	58	65.3	77.8
	Other specified causes	363	222	141	158.1	154.3
199-200	Ill-defined and unknown causes	348	109	239	116.4	147.9

*Annual rate based on December deaths for year stated.

†Death rate per 1,000 population.

Book Abstracts and Reviews

The 1934 Year Book of Pediatrics. Edited by Isaac A. Abt, D. Sc., M. D., Professor of Pediatrics, Northwestern University Medical School; Attending Physician, Passavant Hospital; Consulting Physician, St. Luke's Hospital, Chicago, Illinois. With the Collaboration of Arthur F. Abt, B. S., M. D., Associate in Pediatrics, Northwestern University Medical School; Adjunct Attending Pediatrician, Michael Reese Hospital; Attending Pediatrician, Chicago Maternity Center; Attending Physician, Spaulding School for Crippled Children, Chicago, Illinois. 536 pages. The Year Book Publishers, Inc., 304 South Dearborn Street, Chicago, Illinois. Cloth. Price \$2.25 postpaid.

Another good volume in the Year Book Series has been compiled by Doctor Abt. The people of the world are accepting air conditioning and in this volume we find an excellent article on air-conditioned rooms for prematures. The method is interesting and apparently successful, according to the statistics of the authors. The effect on the infant of morphine administered in labor is a question most interesting to the general practitioner—the answer is found in this book. Various rare cases of diseases of the newborn are also reported.

As always, the subject of vitamin therapy is represented. The clinical experience of the use of Vitamin D milk is reported. The author states that in the prevention of rickets Vitamin D milk is superior to cod-liver oil.

The section on infectious diseases contains many excellent articles. The aspiration technique in laryngeal diphtheria is described; this should be interesting to specialists in this field. A general survey of whooping-cough is given. Numerous articles on the serum treatment of poliomyelitis are reviewed. Excellent workers such as Landon, Park, Kolmer and others have expressed their views.

The sections on the Heart and Diseases of the Blood Vessels contain reports of many rare cases which are not of special interest to the general practitioner. The question of iron administration for anemias remains unsettled.

After a survey of tuberculosis by Drollet, one finds that it is necessary to attach a great deal of importance to a positive tuberculin test. He reports only 15% positive tuberculin in the several thousand school children tested. Many rare diseases of the respiratory and endocrine systems are reported.

Horseley, in the section on surgery, impresses the reader with the variability of abdominal signs in children. He states that the entire body is influenced far more by intra-abdominal lesions in children than in adults. This he explains by increased and unstable metabolism incidental to normal growth.

The three addresses made before the three American Pediatric Organizations are reported—those of Doctor Alfred Walker, Director Charles A. Fife and Doctor John Ruhrah.

R. P.

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THE ECONOMIC CRISES THAT AFFECT MEDICAL PRACTICE

By

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THE HOSPITAL PHASE

The interests of the medical profession and our hospitals are mutual and intimate. The material welfare of our institutions and the science of caring for the sick and injured are the concern of both. The economic security of our hospitals is essential to the material prosperity of the medical profession, and the lack of this security is reflected in an unsatisfactory economic status among members of our medical staffs.

The public as a whole is not interested in sickness. It is interested in health. The public appreciates the physician and the hospitals when the misfortune of illness or injury brings units of the public under their care. The public is far more interested in building up physical strength than it is in the processes employed in the treatment and cure of disease.

In spite of the fact that our people are health conscious and are appreciative of medical service, in an average year only 42% receive the services of a physician, when more than 90%, in the interests of health preservation and disease prevention, should see their family physician, for diagnosis, treatment, or physical examination. Less than 6% of our population received hospital care in 1933, when 13.5% suffered from illness or disease which should have had hospital care.

Our voluntary hospitals averaged a bed occupancy of approximately 50% and admitted 4,900,000 of the seven million pa-

tients admitted to all hospitals in 1933. They had sufficient beds and sufficient facilities to give adequate hospital care to ten million patients, with an average hospital stay of 11 days each, and in that event they would have operated at only 80% bed occupancy.

There is something inherently wrong with our system when less than 50% of our population who should see their family physician each year fail to do so, and less than 50% of the people who should receive hospital care are admitted to our hospitals.

The health bill of our people in normal times is less than \$30 per unit of population. This includes the services of the physician, nurse when necessary, drugs, and hospitalization if experienced. This health bill is paid in its very large part directly by the public. The total cost of health paid by Government is only 14% of the entire bill; 4% is paid by philanthropy, and 72% is paid by the individual.

The unsatisfactory economic conditions existing in the medical profession and in the hospital field are due to economic barriers. The decline in incomes is associated particularly among the people in the low income levels, with a high illness rate and a marked decrease in their requests for medical attention. There is no question but what the tragedy of unemployment and the reduction in income have been manifested in a greatly reduced demand for the services of the family physician and for the desired utilization of our hospital facilities.

The remedy for this situation lies in that system, thoughtfully worked out along sound economic lines, which will enable our people to purchase and receive good medical and hospital care, and to budget and pay for the costs. The objective should

be to lessen, and if possible to eliminate, the economic barrier between the individual who needs this care and the physician and institution who are prepared to furnish it.

The organized care of the sick is essentially a social activity and a medical problem. Historically it has closely followed the religions of the world's peoples and in most instances has preceded their educational systems. It has attracted in all countries the personal endeavors as well as the private philanthropy of those of high as well as of low estate. It was not founded upon the duty or the responsibility of the more fortunate to take care of the unfortunate of their friends and families, but upon the compassion that the more civilized of the world's peoples have always had for the sufferings of humanity. Authoritative Japanese history records the labor of an Empress in caring for the sick poor of her people more than 2,000 years ago, and describes, among her ministrations, how she withdrew the pus from the lepers' sores with her own lips. More recently, during a yellow fever epidemic in one of our southern cities when all who could had fled and only the indigent and immune among the citizens remained, the leading exponent of the world's oldest profession turned her house into a refuge for the stricken poor, and she and her maids cared for them until she herself became a victim of the scourge and died. Some 15 years ago the leading citizens of this southern city erected a monument above her grave as a memorial to her sacrifice for the indigent sick.

And so the universality of this phase of social and medical work runs through the world's history, since the world has progressed from savagery when people abandoned their sick poor to the beasts and vultures or mercifully ended their sufferings by knocking them in the head. Since then, through their mercy and compassion, civilized people have succored their sick and infirm poor and helped them back to health.

This great social movement, much older than modern civilization, has materially softened the color tones of the dismal picture which authors and philosophers limn when they talk about "man's inhumanity to man."

With the advent of the Christian fathers, with the rapid development of medicine, and the closer organization of peoples and tribes as political divisions, the care of the indigent sick became more and more the responsibility of the state, and somewhat less the manifestation of charitable and philanthropic altruism. The economic advantage of conserving and restoring the health of the "sick poor" rather than destroying their lives when they became infirm was better appreciated and Governments began to exercise an increasing paternalism over their people, a majority of whom were indigent. Not only that Governments might become powerful in war but that in times of peace their people would enjoy the blessings of a prosperous life in commerce, agriculture, manufacturing, and the arts. They no longer depended entirely upon the mass to carry on this essentially great social work but recognized that when and if the mass failed, then it became the responsibility and the duty of the state to bring to its people, the well-to-do as well as the indigent, the benefits of a conserved health and proper medical and hospital care when health failed them.

The state appreciated that the mass effort in taking over this important function for the welfare of the people might often fail both in resources and in purpose, and that mass effort, unless directed by independent and highly specialized individual leadership, too frequently creates chaos.

INCEPTION OF THE MODERN IDEA

The modern hospital idea, in which has been developed the facilities for the care of all classes,—the rich, the middle, and the indigent—together with the plans for the financial support of our hospitals, is about 200 years old. It probably had its inception in England early in the eighteenth century. Previously to that period, hospitals were operated almost if not entirely for the care of the sick poor who were acutely ill, as well as for the custodial and the domiciliary sick. Our own hospitals of 150 years ago made few if any provisions for the care of any other class of patient, or provision for the care of the rich or middle class patients.

For the past 50 years, beginning shortly after the Civil War, the hospital system on

this continent developed rapidly, with its greatest development within the last 25 years. The amazing progress of medical knowledge, the systematic study of communicable disease, the movement of population from rural to metropolitan centers, and the surprising impetus to develop religious, educational, and other welfare activities were directly reflected in the growth and number and the increase in use and efficiency of our hospitals.

USE OF HOSPITAL FACILITIES

In continental United States there are today 6,437 hospitals. Distributed as to support, 1,776 are governmental tax-supported institutions and 4,661 are voluntary hospitals supported by philanthropy. There are good hospital facilities available for 98% of the population of this country within a proximity of 25 miles of their homes. The 4,661 voluntary hospitals receive no direct support from Federal, state, county, or city tax revenue sources. They are owned and supported by church, fraternal, and industrial organizations or by associations of philanthropic citizens of their communities. These hospitals are charitable, welfare, and educational institutions owned and supported by society and in no part whatsoever by the state. Their income is derived from three sources only: first, the payments made by patients for their care; second, the contributions from charitable citizens and organizations; and third, a comparatively small income for their endowments. They have a total of 435,000 beds. The income from their endowments in normal times would support less than 17,000 of these beds.

In 1933 a little over seven million patients were admitted to all the hospitals in this country. Thirty per cent, or 2,100,000 were admitted to governmental hospitals—Federal, state, county, and city institutions. Seventy per cent, or 4,900,000 were admitted to the voluntary hospitals. In the prosperous era of the '20's 15% of the service in voluntary hospitals was given to charity, to the care of the indigent sick, from whom no remuneration was received nor expected. In 1933 the charity load was increased to more than 40% and seems to be increasing. In addition to this service, the out-patient departments of the voluntary

hospitals treated 26 million patients, practically all of whom belong to the indigent class.

There has been a constant shift of patients, who in better times paid for their hospital care as private patients, to the wards and charity service in our voluntary hospitals.

It costs \$475,000,000 annually to operate our voluntary hospitals. They received as reimbursement for the care of patients in 1933 \$215,000,000—less than 50% of the cost of their operation. Their income from philanthropy, including endowments, Community Chests, and other public contributions, amounted to about \$195,000,000. The voluntary hospitals of the country experienced an average operating deficit in 1933 of \$150 a bed, or approximately \$65,000,000. This deficit was incurred in spite of drastic economies in the hospital payroll, in the neglect of desired repairs and improvements to plants, in greatly reduced purchases for replacements of furniture and equipment, and other operating expenditures. The deficit is reflected in large withdrawals from capital funds or from endowments, in money borrowed to meet the operating disbursements, and in the increased extension of credit by commercial concerns. The deficit was largely, if not entirely, due to the increase in the load of charity patients from 15% in 1929 to more than 40% in 1933.

Voluntary hospitals, by the purpose and scope of their organization, are traditionally institutions of charity. They serve the public welfare. They make no profit. No monies received accrue to the financial benefit of any trustee, member of the staff, or any other person. Every dollar of income goes into the betterment of plant and equipment or is devoted to increasing their facilities for the care of indigent patients. The moment they depart from their traditional character as institutions of charity, that moment hospital meaning to our people, both patient and philanthropist, will be lost. Hospital efficiency will suffer and the breakdown of the entire voluntary hospital system will result.

It is a trite but not altogether truthful saying that only the very rich or the very poor secure good hospital and medical care. However pertinent this has been in the

past, it is in no sense true now. The class of people which the physician and the hospitals have an equal interest in and take equally good care of are those in the low income and salary classes, many of whom are being forced into unwanted charity for economic reasons, or by their own inclination through a mistaken governmental paternal policy that is pauperizing too many of our population. This may be and is quite likely to be a continuing program for many of our people, but the vast majority do not want to enter the charity class, nor, if they enter, to remain longer than is required to work their way out.

REESTABLISHMENT OF FINANCIAL STABILITY OF THE TEMPORARILY INDIGENT

To this numerically important and right-minded class of our people society and the medical profession owe a duty that they should not be slow in discharging. The generous policy of the Federal Government, whether wise or mistaken, cannot continue always, and soon the responsibility which it has assumed must be shifted back, first to the state, then to the community, and finally to the individual himself. To arrive at this ultimate and certainly desired solution, the group engaged in social welfare work, and its affiliates, must concentrate the best thought and the most earnest endeavor. Permanency of concerted policy and effort must replace the expediency of the moment if real progress is to be made, and if the self-respecting, self-supporting, honorable citizen of tomorrow is to replace the unwilling indigent of today.

Hospital authorities feel that much to this end can be accomplished by encouraging thrift and through the prudent application of a small part of the personal or family income during the period that the potential patient is in health and employed, against the time that accident or illness makes his admission to the hospital necessary. The even distribution of anticipated costs through small periodic payments made by the individual in many instances, or by organized groups of individuals vocationally affiliated, for a majority of our wage-earners will, in a manner that is actuarially sound and inexpensive, provide for the uncertain and unexpected costs of hospital care, and so far as hospital costs are

concerned will remove the patient from the indigent class to the self-supporting, pay-for-what-you-receive class to which he properly belongs and in which he prefers to remain.

Over an average of years, out of every 100 of the population, from 8.5 to 9 will have a hospital experience each year. The average length of stay of these patients in hospitals is very close to 11 days. The incidence of illness requiring hospitalization does not vary greatly in different income groups. Excluding indigent cases, it costs a family of 3.8 persons an average of about 3% of the annual family income to cover the entire cost of illness, including physician's services, nursing, drugs, and hospitalization when necessary.

INCIDENCE OF ILLNESS IN 8,677 FAMILIES

An interesting study made by Drs. Armstrong and Dublin and Miss Elizabeth J. Steele of the Metropolitan Life Insurance Company, covering 8,677 families, shows that 7,591 families reported illness necessitating a physician and 1,682 families reported illness that required hospitalization. The entire number of families reporting illness spent a total of \$854,343 for the costs of illness during a 12 months' period. The number of families whose illness required medical care spent \$737,310, 42.4% of which, or \$212,619, was spent for hospitalization by the 1,682 families who required hospital care—an average expenditure of \$102.05 per family for hospital care for the 12 months' period. The number of hospital cases in these 1,682 families was 4,519—an average payment per hospital case of \$46.38.

The following table shows the percentage of families in the specified income class in the group surveyed by the Metropolitan Life Insurance Company, and for the population of the United States in 1928.

Family Income	United States	Metro-politan Employees
	1928	1930
All incomes	100.0	100.0
Under \$1,200	15.0	0.1
\$1,200 to \$2,000	34.8	5.6
\$2,000 to \$3,000	24.6	35.1
\$3,000 to \$5,000	15.7	50.4
\$5,000 to \$10,000	7.0	6.9
\$10,000 and over	2.9	1.9

It covers, excluding the indigent group, the so-called "Mr. Average Citizen" group, with which physicians and hospitals are very much concerned and for whom they desire to provide an efficient hospital service when and as needed without provoking an economic tragedy in the family finances.

CHARITY SERVICE AND THE STATE'S RESPONSIBILITY

Taking the state of New Jersey as an average typical population for the major portion of the United States, we find that there is an increase in the admission of ward patients, most of whom were indigent, from 61% in 1929 to 67% in 1932, with the number of ward patient days increasing from 1,530,437 in 1929 to 1,736,741 in 1932—an increase of 206,304 patient days, or 13.5%. This includes 48 large general hospitals in the cities of northern New Jersey. Thirty-five general hospitals reported out-patient visits of 638,637 in 1929 and 951,372 in 1932. The operating deficits for the 46 hospitals in 1932 are reported as \$5,438,621.

New Jersey is one of the two or three states—New York is another—in which the state poor law distinctly recognizes that "the community has a definite and fixed responsibility to provide necessary hospital treatment for the indigent sick." In New York the state statutes fix this responsibility and make it mandatory upon the community to provide adequate hospital care for its indigent sick. Other states have laws which to a much less degree than in New York and New Jersey charge the community with some minor responsibility for the care of indigents. It is only fair to assume that, other agencies failing, the responsibility for the hospitalization of the indigent sick becomes the responsibility of the state; that the responsibility for caring for the middle class patient who can pay in part or in whole for his hospital care is the responsibility of the hospital; and that the hospitalization of the well-to-do is their own responsibility.

So long as voluntary hospitals were receiving the philanthropic support that they have received during more prosperous times, they could assume a very heavy burden of care of charity patients and operate without serious deficit, but philanthropic support has decreased until it has al-

most disappeared. The income of hospitals from gifts and benefactions, not including monies from Community Chests and other public subscriptions, has dwindled from \$135,000,000 in 1930 and 1931 to \$86,519,000 in 1931 and 1932, and less than \$40,000,000 in 1932 and up to June 30, 1933.

The problem of hospital care for the indigent sick is one that must be speedily solved. The tax-supported institutions are filled to their capacity and have long lists of patients waiting for admission. The voluntary hospitals are averaging a bed occupancy of under 55%, and 50% or more of their patients are cared for either without any reimbursement or at a charge much less than the cost of service rendered. Voluntary hospitals have been denied any relief from participation in Federal and in many instances in state funds for reimbursement for the cost of the care they give indigent and unemployed patients. They have struggled along in the face of mounting deficits, hazarding their future security and the permanency of their institutions, in maintaining hospital service on a high plane of efficiency and in assuming this vastly increased load of charity patients.

A participation in the tax revenues of the city, county, states, or Federal governments through this period of economic readjustment and at least to the extent of the cost of the care of the charity patients coming from families on the relief rolls, who are in need of hospital care, would in all probability bridge this difficulty and prevent the breakdown of the voluntary hospital system in this country. There are not sufficient hospital facilities in the metropolitan centers of the country, in the tax-supported institutions, in the municipal and county general hospitals, to take care of the indigent sick who apply to them for admission. If it had not been for the voluntary hospitals' service to the sick poor during the past three or four years, the people of this country would have suffered beyond any conceivable measure. Thousands would have died for lack of hospital service which under our system of government is the right of every citizen when he is in need. Epidemics would have invaded our rural communities and our cities, and the morbidity of our people, with all the mis-

ery and hardship that goes with it, would have been greatly increased.

To those engaged in hospital and medical work, the health of the people must be their first concern. With sickness in every home, every public welfare activity falters and sometimes fails. Poverty with all its terrors becomes unbearable when disease adds its burdens, and the poor are denied medical and hospital care.

It is your problem and ours to turn the tide of dependency into the current of economic security. To that end the hospitals, physicians, philanthropists, and social economists must work with the closest cooperation and the fullest understanding of the problem which confronts us.

There are no insurmountable obstacles, no large conflict of interests, among the three groups concerned in the economics of medical practice—

The public, who pays the bill;
The physicians who serve, and
The institutions which provide hospital care.

There must be a meeting of minds of these groups that must have a joint appeal. The policy adopted should be outlined by the interests representing all of these three groups, and not by the interests of any single group. The pendulum must not be permitted to swing so far as to permit socialized medicine on the one hand, nor the establishment of reactionary policies to guide and rule on the other. There must be due consideration for and full recognition of the fact that the changing era has brought in changing problems, and that the old order of things, so long established, must change to meet the new challenge and serve the best interests of public, physician, and hospital alike.

Leadership in thought and action must come from these associated groups. This leadership must develop that order of thought, that system of procedure, to which the public will give its sympathetic cooperation, that will secure a unanimity of support, and that will provide on the one hand the desired medical and hospital care for all our people, and on the other hand a fair remuneration for the services which physicians and hospitals render.

18 E. Division Street.

THE TREATMENT OF INTRACTABLE PAIN

WITH PARTICULAR REFERENCE TO TRIGEMINAL NEURALGIA*

By
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Nashville, Tenn.

Pain is unquestionably the most common and the most unbearable symptom for which patients seek relief. Whenever possible, the physician strives to relieve it by removal of its cause. But in many cases this is impossible and we are faced with the necessity of relieving the patient of his burden of intractable pain by whatever means may be available. This can only be done by the use of increasingly large doses of strong narcotics with the inevitable drug addiction or by the interruption of the nerve pathways which convey the sensation of pain to the seat of consciousness. Certainly, in most instances, the latter is the preferable method. I wish to discuss herein some of the more common types of intractable pain and the appropriate methods employed for their relief and to cite a few recent typical clinical examples.

TRIGEMINAL NEURALGIA

One of the most important and common examples of intractable pain is trigeminal neuralgia,—*tic douloureux*. Its cause we do not know and no definite pathologic picture accompanying the disease has ever been found. It has been suspected of being a filterable virus disease, and of being due to focal infection in the teeth or the sinuses. In many cases, the first pain experienced is referred to the teeth and it is rare for a patient with this disease to reach the neurosurgeon without first having had the teeth extracted. It is entirely possible that some cases are due to dental infections and perhaps many are prevented from developing major trigeminal neuralgia by early dental treatment.

When the disease is fully developed, it is unmistakable. The pain is paroxysmal, lightning-like and is referred to one or more branches of the trigeminal nerve. Pri-

*Read before the Madison County Medical Society, Huntsville, January 8, 1935.

*From the Department of Surgery, Vanderbilt University.

mary involvement of the ophthalmic division is rare. The pain is brought on by chewing, speaking, a gust of cold wind,—in short by any stimulus. Often there is a small area, called a "trigger-zone", the slightest stimulus to which brings on an excruciating spasm of pain. In most cases there are occasional remissions, particularly in the summer-time, but the pain always returns. On examination, the sensation of the face is found to be entirely normal. This is in sharp contrast to the patients with trigeminal pain due to tumors of the gasserian ganglion, in whom there is always diminished sensation in the area to which the pain is referred.

Fortunately, the pain of trigeminal neuralgia is readily amenable to treatment and can, in most instances, be completely relieved. Two methods of treatment are available: alcohol injection of the peripheral divisions of the nerve and operative section of the sensory root of the nerve.

Alcohol Injection: The relief afforded by alcohol injection is, of course, temporary and the pain may be expected to recur when the nerve has regenerated. This period varies from six months to two years. However, the procedure is of great value in individuals in whom operation is contraindicated by such conditions as circulatory disease, or old age. The procedure was introduced by Pitres and Verger¹ and Schlosser² in 1902 and 1903, respectively. Both the second and third divisions of the nerve lend themselves readily to alcohol injection. In both instances, the needle is inserted immediately under the outer third of the zygoma. For injection of the second division, it is pointed forward and inward along the base of the skull to enter the nerve at its emergence through the foramen rotundum and before it enters the orbit (Fig. 1.). This point lies at a depth of five to six centimeters in most cases. If the third division is to be injected, the needle is pointed farther posteriorly and

slightly farther downward, to enter the nerve at the foramen ovale (Fig. 2). This depth is usually about 4 cm. One's knowl-



Fig. 1. Injection of the second (maxillary) division.



Fig. 2. Injection of the third (mandibular) division.

edge of the correct position of the needle depends upon reproduction of the patient's pain when the needle enters the nerve. With highly excitable patients, it is sometimes very difficult to be certain of this point and great care must be exercised. About 1.5 to 2 cc. of 95 per cent alcohol should be injected. It is momentarily very painful, but the pain quickly gives way to anesthesia, the distribution of which can be tested with a pin while the needle is still in place.

Although in many cases the pain of trigeminal neuralgia spreads from the second

1. Pitres and Verger: Facial neuralgia treated by alcohol injections, *Bull. et mem. Soc. med. et chir. de Bordeaux*, 1902, p. 91.

2. Schlosser: Healing of peripheral irritating conditions of sensory and motor nerves, *Ztschr. f. Augenh.* 10: 335, 1903.

division into the first, the pain in these cases will usually be relieved by injection of the second division. In the rare cases, with primary pain in the first division, injection will give relief only in those cases in which the pain is confined to the forehead. In these cases, the supra-orbital nerve can be injected just above the orbit.

The following is an example of the effects of alcohol injection.

Case 1 (V. U. H. No. 63368). Referred by Dr. M. A. Blanton, Union City, Tennessee.

The patient, Mrs. A. J., aged 41, was admitted on May 9, 1934. Fifteen years previously, she first experienced a mild but sharp pain in the left cheek and left upper teeth. The pain grew rapidly more severe. It was sudden in onset, lancinating in character and seemed to be brought on by any movement of mouth or tongue, by cold breezes or water or any other stimulation of the face. It came in attacks lasting several weeks and occurring two or three times a year. After about two years most of her upper teeth were removed and she was free of pain for several months, but it soon recurred with increased severity, and continued to occur until the time of admission, without relief from any medication.

She had no headaches or visual disturbance. Speech, memory, locomotion and the use of her hands were subjectively unimpaired.

Neurologic examination revealed no abnormality except that the patient's pain was set off by the slightest touch on the left cheek, left side of the nose or in the left side of her mouth. X-rays of her skull were normal. Spinal fluid was under normal pressure, contained two cells per cu. mm. and spinal fluid and blood Wassermann reactions were negative. The urine was normal. A moderate secondary anemia was present. There was no leukocytosis.

The diagnosis of trigeminal neuralgia, left second division, was made and she was advised to have a posterior root section. However, for personal and domestic reasons, the patient preferred alcohol injection. Accordingly, the second division of her left fifth nerve was injected with 1.5 cc. of 95 per cent alcohol. Her pain was reproduced, followed by anesthesia in the distribution of the second division. She has had no recurrence of her pain to the present time but is troubled somewhat by the numbness of her face.

This patient will undoubtedly have a recurrence of her pain and will have to return for the radical operation at a later date. The numbness is an inconvenience which these patients must learn to endure. However, the pain is usually so severe that they are glad to accept the numbness in its stead.

Alcohol injection is also of great value in those cases in which there is some doubt as to the accuracy of the diagnosis. Case 2 illustrates this point admirably.

Case 2 (V. U. H. No. 60494). Referred by Dr. David L. Salmon, Madisonville, Kentucky.

Mrs. K. L., aged 45, gave a typical history of trigeminal neuralgia, primary in the second division, with spread to the first division. The total duration was ten years. However, in addition, she stated that between attacks her face was sometimes numb and that she had occasional severe headaches. On examination, there was found a definite hypesthesia and hypalgesia in the distributions of the first and second divisions of the fifth nerve on the right, more marked in the latter. X-ray films showed marked dilatation of the diploic channels without localizing abnormalities.

The patient also had a history and physical findings suggestive of long-standing, severe gall-bladder disease.

On account of the very unusual objective sensory changes, it was felt that the diagnosis of trigeminal neuralgia could not definitely be made. Pneumoventriculograms were made which showed normal ventricular outlines. The right second division was then injected with alcohol. The patient has had no further pain in the distribution of the second division, but recently stated that she has some slight pain about her eye (first division).

The alcohol injection in this case was of diagnostic as well as therapeutic value, since its success definitely ruled out some other lesion, such as a tumor of the gasserian ganglion or pons.

Operative Treatment: In the great majority of cases, radical operative treatment is the procedure of choice. The operative risk is exceedingly small and the relief afforded is permanent.

In 1890, Rose³ first removed the gasserian ganglion for trigeminal neuralgia. This procedure was employed until 1899 when Frazier,⁴ at Spiller's suggestion, employed section of the posterior root. Both operations had two great disadvantages: they destroyed corneal sensation, resulting frequently in trophic corneal ulceration and loss of the eye; and they necessitated sacrifice of the motor root of the nerve with paralysis of the muscles of mastication on

3. Rose, W.: Removal of gasserian ganglion for severe neuralgia, *Lancet* 2: 914, 1890.

4. Spiller, W. G., and Frazier, C. H.: The division of the sensory root of the trigeminus for the relief of tic douloureux, *Philadelphia Med. Jour.* 8: 1039, 1901.

the affected side. However, in 1918, Frazier⁵ showed that the distribution of fibers in the dorsal root corresponded with the distribution of the three peripheral divisions of the nerve. On this basis, he advocated and proved the efficacy of *differential* section of the posterior root. By this method only the fibers corresponding to the area involved by the pain need be sacrificed. Frazier showed, moreover, that the motor root can be identified and retained intact.

This operation of differential posterior root section is now almost universally employed. With the aid of such neurosurgical adjuncts as an adequate suction apparatus, electrically lighted retractors and the Bovie electrosurgical unit, it has become a relatively simple procedure.

and divided (Fig. 4). The wound is closed in layers with fine silk stitches.

Case 3 illustrates this procedure.

Case 3 (V. U. H. No. 62797). Referred by Dr. Walter Faught, Nashville, Tenn.

Mr. W. H. C., aged 67, was admitted April 12, 1934. For six years he had had severe paroxysmal pain in the left side of the face, originally in

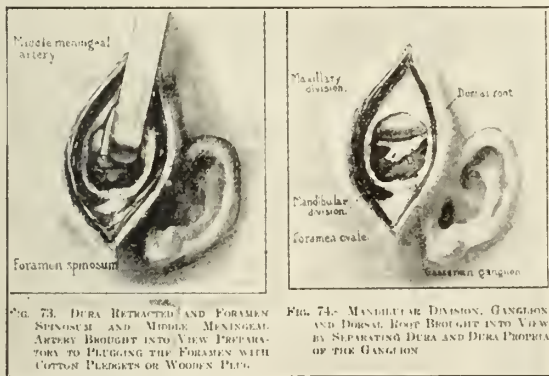


Fig. 3. Approach to the gasserian ganglion and posterior root. After Stookey⁶ in Nelson's Loose Leaf Surgery.

A small opening is made in the squamous bone under the temporal muscle, the temporal lobe elevated extradurally and the middle meningeal artery ligated and divided (Fig. 3). This brings into view the foramen ovale and, when the dura propria and dura are separated, the ganglion and posterior root are exposed. The sheath of the root is opened. When the motor root has been identified, the desired amount of the sensory root is picked up with a hook

5. Frazier, C. H.: A refinement in the radical operation for trigeminal neuralgia, J. A. M. A. 76: 107, 1921. Also, Subtotal resection of sensory root for relief of major trigeminal neuralgia, Arch. Neurol. and Psychiat. 13: 378, 1925.

6. Stookey, B.: Surgery of the nerves. In Nelson's Surgery, Vol. II, p. 562-563.

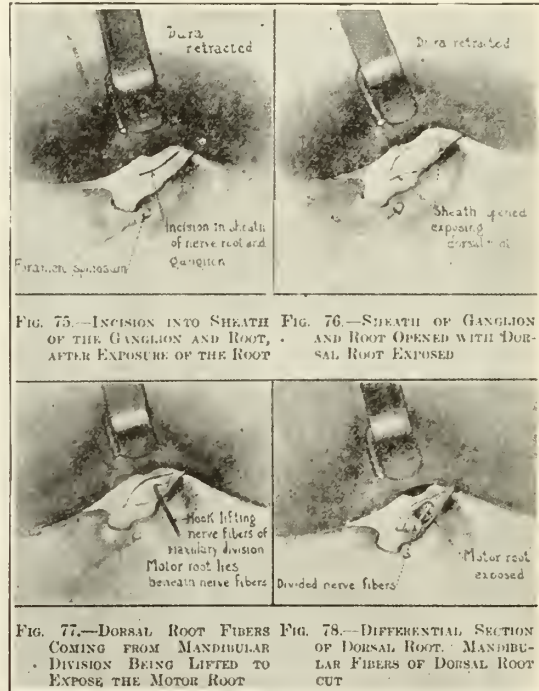


Fig. 4. Differential section of the posterior root. After Stookey in Nelson's Loose Leaf Surgery.

the lower left jaw, but later spreading to the second division of the nerve. His teeth had been found to be normal and, one year previously, he had had an alcohol injection elsewhere with relief for several months. However, the pain returned with greater severity and for several weeks before admission, he had been almost unable to eat or sleep.

His general condition was good. Heart and lungs were not abnormal. Blood pressure was 150 systolic and 85 diastolic. There was no disturbance in the sensation of the face, but the slightest movement of the jaws set off an excruciating paroxysm of pain.

On April 14, the outer two-thirds of his left posterior root was divided. Figure 5 shows the corresponding area of anesthesia. He got immediate relief of pain and has had no further symptoms except the inevitable numbness and an occasional "drawing sensation" in his face.

7. Dandy, W. E.: Section of the sensory root of the trigeminal nerve at the pons. Bull. Johns Hopkins Hosp. 36: 105, 1925.

DIAGNOSIS

In well developed typical cases, the diagnosis of trigeminal neuralgia is easily made. However, in the early stages and in atypical cases, great difficulty is sometimes encountered. Tumors of the sheath of the gasserian ganglion and certain tu-

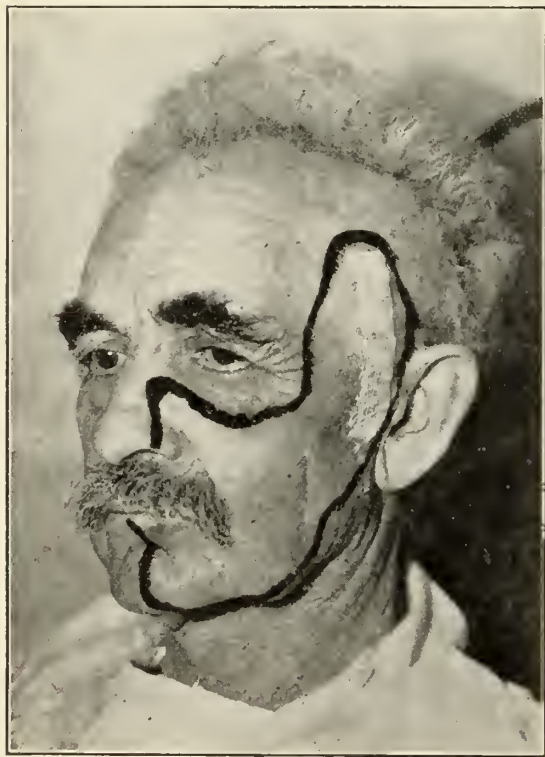


Fig. 5. Case 3. The postoperative area of anesthesia is outlined.

mors in the posterior fossa often cause spasmodic facial pain. Nearly all these cases, however, present impairment of facial sensation, a very rare finding in true tic douloureux (See Case 2). Further, such patients usually have other general and focal neurologic signs produced by the tumor.

Other types of pain in and about the face may be confused with trigeminal neuralgia. Several of these are discussed below.

OTHER TYPES OF INTRACTABLE PAIN

Sphenopalatine neuralgia: This condition was first described by Sluder.⁸ The

pain is more often continuous than spasmodic, is referred to the root of the nose, the eye and the zygomatic region. It is relieved by cocainization or alcohol injection of the sphenopalatine ganglion. Similar pain sometimes results from infections of the sphenoid sinus, which should always be investigated in such cases.

Geniculate ganglion neuralgia was described by Hunt⁹ in 1907. It is a rare condition characterized by pain in the external ear spreading into the side of the face. There is usually an herpetic eruption in the external auditory canal.

Inoperable carcinoma about the face often causes extremely severe pain in the trigeminal distribution. Alcohol injection or (in those cases with a life expectancy greater than six months) posterior root section is indicated.

Glossopharyngeal neuralgia is a true spasmodic tic of the ninth nerve. The pain is referred to the pharynx and tonsillar regions, sometimes to the inner ear. It is often confused with trigeminal neuralgia. For its relief, the ninth nerve must be sectioned at its origin in the posterior fossa.

Meinere's disease is probably a tic of the vestibular portion of the eighth nerve. It is characterized by sudden attacks of violent vertigo, vomiting and tinnitus. Section of the eighth nerve brings complete relief.

Intractable visceral pain: Many types of visceral pain require neurosurgical procedures for their relief. Of these the most common are the pain of inoperable advanced carcinoma, the visceral crises of tabes dorsalis and angina pectoris. The first two are best treated by section of the pain-fibers in the lateral spinothalamic tracts of the spinal cord or of the posterior roots corresponding with the distribution of pain. Angina pectoris has formerly been treated with only partial success by posterior root section or injection, but recently much progress has been made in treating it by resection of the cervical sympathetic trunk and upper two dorsal sympathetic ganglia.

Another painful disease falling within the great new fields of sympathetic surgery

8. Sluder, G.: The role of the sphenopalatine (Meckel's) ganglion in nasal headache, New York M. J. 87: 989, 1908.

9. Hunt, J. R.: Herpetic inflammations of the geniculate ganglion, J. Nerv. and Ment. Dis. 34: 73, 1907.

is Raynaud's disease, characterized by attacks in which the extremity involved becomes cold, blue and exceedingly painful. Similarly the intermittent claudication in thrombo-angiitis obliterans is relieved in properly selected cases by sympathectomy.

Operations on the sympathetic nervous system have been pioneered by Jaboulay,¹⁰ LeRiche,¹¹ Adson and Brown¹² and many others. The first procedure employed for arterial disease of the extremities was periarterial sympathectomy, but this has everywhere given way to the operation of ganglionectomy. If the lower extremities are involved, the lumbar chain of sympathetic ganglia are removed; if the upper, the middle and inferior cervical and upper two thoracic ganglia are removed. The former is done through a lower midline abdominal incision, the latter preferably by the posterior approach, which allow bilateral exposure of the sympathetic trunk through a single incision.

It may be seen, then, that though the cause of many diseases may elude us and though our best treatment may not halt the inevitable march of some diseases toward death, yet can we bring comfort and peace to such sufferers by alleviation of the scourge of pain.

10. Jaboulay: The treatment of certain trophic disturbances of the foot and leg by denudation of the femoral artery and stretching of the vascular nerves, *Lyon med.* 91: 467, 1899.

11. LeRiche, R.: Prolongation of the section of the perivascular nerves in certain painful syndromes of arterial origin, *Lyon chir.* 10: 378, 1913. Also many later papers.

12. Adson and Brown: Treatment of Raynaud's disease by lumbar ramisection and ganglionectomy and perivascular sympathetic neurectomy of the common iliacs, *J. A. M. A.* 84: 1908, 1925.

Cancer Therapy—Cancer of the tongue in its anterior third can be so readily excised wide of its margins and the defect immediately closed with a minimum of organic deformity and no deficiency of speech, that surgery is to be recommended. In the medial and posterior thirds radiation is accompanied by a sufficiently large number of permanent regressions, with a minimum of risk and speech defect, that interstitial radiation must be given the choice of methods over all other treatment.—*Fischel, Texas State J. Med., March '35.*

ALLERGY FROM THE STANDPOINT OF THE GENERAL PRACTITIONER*

By
CLARENCE K. WEIL, B. S., M. D.
Montgomery, Alabama

In 1868, when Henry Ward Beecher, a hay-fever sufferer, wrote to Doctor Oliver Wendell Holmes in regard to a remedy for his affliction, he received the following reply: "Gravel is an effectual remedy. It should be taken about eight feet deep." We have gone a long way since 1868 when such a hopeless outlook was offered to the sufferer from hay-fever or asthma, but we have not yet reached a stage where even the most optimistic can claim that relief can be given to all patients with these afflictions.

The concept of allergy has made possible rapid strides in explaining the nature of hay-fever, asthma and allied conditions. Each year a better understanding of these diseases is made possible by the work of many investigators in this still virgin field of medical research. Though the study and care of a difficult case may tax the knowledge and skill of the specialist, there are many cases which can be handled by the general practitioner who possesses a certain amount of knowledge of the fundamentals of the subject combined with a large amount of ordinary common sense. In this presentation I shall bear constantly in mind the fact that I am talking to men who are doing general practice, who see many cases of asthma and hay-fever, and who must be able to treat without elaborate equipment and without an unlimited supply of extracts.

Allergy refers to a state of hypersensitivity to a material, probably of a protein nature—a state which is transmitted from parent to child and which may exist for many years without the manifestation of symptoms. The exact nature of this state is not yet thoroughly understood, but it is known to differ materially from the type of immunity to disease which is encountered in human beings as well as to the state of anaphylaxis encountered in experimental animals. It is inheritable. It is not contagious. It may be transmitted—

*Read at a meeting of the Northeastern Division of the Association, Talladega, January 15, 1935.

though the effect is only transient—to the skin of a non-sensitive person by the injection of serum from one affected—a procedure known as passive transfer.

In order that symptoms may be produced, not only must the individual be allergic or hypersensitive, but he must come in contact with the particular allergen or atopen to which he is sensitive. The allergic response may take several forms just as the allergen may differ in type and the mode of contact differ in various conditions.

It is generally known that hay-fever and asthma are allergic reactions. Perennial hay-fever or vasomotor rhinitis, urticaria, certain types of eczema and angioneurotic edema are also recognized as allergic manifestations. There is another group of disease syndromes, some of which may be due to allergy. For example, there are some cases of convulsions of the epileptic type which are due to the ingestion of a food to which the individual is sensitive. There are also cases of migraine, of hypertropic pyloric stenosis, of purpura, of abdominal cramps or urinary frequency, of meningeal symptoms resembling meningitis and of episcleritis of allergic origin. Let me make it clear that I am not intimating that all cases of epilepsy are due to allergy. Such a statement would be as ridiculous as to say that, because a few cases of epilepsy are found to be due to hyperinsulinism, all cases of epilepsy are due to hyperinsulinism. It would be equally foolish to assume that all eczema is allergic in origin or all cases of purpura or all headaches. All of these conditions are not disease entities but disease syndromes. They are merely groups of symptoms due to many causes among which allergy is simply one of the causes. Let me also add that at the present time we are by no means sure that all cases of asthma are allergic though we have reasonable proof that a majority of them are allergic in origin.

Among the various substances to which an individual may be sensitive may be listed the following:

1. *Pollens*—In the spring of the year the tree pollens are the most frequent causes—the oak, elm and pecan being the most important factors in this section of the country. In the summer the pollen of the grasses is the chief cause and though there are

over a hundred species of grasses in this section of the country, fortunately most or perhaps all the people who react to one grass will react to all of them. In the fall of the year, ragweed pollen is the chief source of trouble, with the pollen of cocklebur and artemesia playing a prominent but less important role.

2. *Animal Emanations*—The hair of any animal may be the cause of allergic symptoms and contact with the hair may come through the presence of the animal itself or through the hair or hide in some manufactured article about the house. The important animal hairs are those of the horse, dog, cat, rabbit, sheep, goat, cow, camel, rat, guinea-pig, hog, deer and even of man and of the animals used in making furs. The feathers of birds may also cause trouble, particularly those found in pillows, comforters and mattresses—chicken, goose and duck. The feathers of the parrot, canary, pigeon, dove, quail, sparrow and turkey may also cause trouble.

3. *Miscellaneous Inhalants*—This is an important group consisting of orris root which is the basis of many face powders; of flaxseed which may appear in chicken- or cow-feed or in cereals; of cottonseed which is present in fertilizer, in cheap cotton mattresses and in cooking oils and shortenings. Then there is pyrethrum which is used in insect sprays and powders, kapok which is used in life preservers and pillows, cuttle-fish bone which is used for polishing silver and to feed canaries. There is silk, fish glue, castor bean, the scales of sand flies, butterflies and moths, soap, Indian gum, maple leaves, corn shucks, grass fibre, jute and henna. Certain occupational dusts, as those of leather, coffee and flour, may also be a source of trouble.

4. *Foods*—Almost any food may cause allergic symptoms. The important food allergens are milk, wheat, eggs, soy bean, cocoa, fish, shell fish, beans and peas. Any of the fruits, vegetables, meats or cereals may cause trouble. Water and cane sugar are about the only substances which have never been shown to have an allergic effect.

5. *House Dust*—House dust is a very important antigen, being an important factor in about half the cases of hay-fever and asthma. Just what there is in the house

dust that causes the trouble is not yet known since an individual who reacts to house dust may fail to react to any of the individual allergens which are found in the house. In treatment, we have preferred extracts of dust made from the home of the patient rather than stock preparations.

6. *Molds*—One of the substances in house dust which may be responsible for the production of reactions in a sensitive person is the spores of certain molds which grow, not in moist places like mildew, but in the feathers of the pillow, in the cotton in the mattress, in the dust beneath the bed and under the rug. Molds are found also in various types of fancy cheese. Yeast is a mold. Yeast is used in the manufacture of beer and bread. The ringworm which causes epidermophytosis is a mold. There are molds in the bark of trees, molds in the soil and a species of molds affecting tomato plants—all of which have been proved to be causes of allergic manifestations.

7. *Bacteria*—The reaction of the body to bacteria is probably not an allergic reaction but it has been demonstrated that the injection of vaccines of certain strains of organisms intradermally results in an area of erythema at the end of twenty-four to forty-eight hours and that treatment with any of these reacting strains is of benefit in asthma. The bacteria which are of chief importance are streptococci, pneumococci, staphylococci, the influenza bacillus, the colon bacillus and the micrococcus catarrhalis.

8. *Drugs*—There are many drugs which are capable of producing allergic reactions. Among these may be mentioned lycopodium, ipecac, aspirin, quinine, iodine, morphine, senna, arsphenamine, formaldehyde, bromides, cocaine, novocaine, atropine, cod-liver oil, podophyllin, lead, acacia, allonal, ephedrine, rhubarb, pokeroot, and ichthyol. Most of these drugs produce an allergic dermatitis but urticaria and angioneurotic edema are fairly often encountered and occasional cases of hay-fever and asthma.

There are several methods of determining the specific allergen to which the individual is sensitive. (1) The best known method and the one used routinely by those doing allergic work is the cutaneous or scratch test in which, upon a superficial

scratch in the skin, is placed a drop of $n/10$ sodium hydroxide and a pinch of the allergen in powder form. A positive reaction consists of a wheal surrounded by an area of erythema. (2) There are many allergens that do not react well by the cutaneous method and there are individuals who are only slightly sensitive and do not react to the scratch test. Under these circumstances the intradermal test is valuable. It consists of injecting into the skin a minute quantity of the concentrated liquid extract of the substance to be tested. The reactions resemble those seen with cutaneous tests but are generally larger. (3) There are some individuals who give negative reactions to all skin tests and at times the history is so suggestive in pointing to an allergen as the cause of the trouble that one is justified in trying the ophthalmic or nasal test. By the former method, which is used in testing for pollen sensitization, a pinch of the pollen is put just inside the lower lid and removed after five minutes. A positive reaction consists of redness and edema of the conjunctiva which clears up promptly upon the instillation of a drop of 1:1,000 adrenalin. In the nasal test a little pollen is placed directly upon the nasal mucous membrane or a piece of cotton is saturated with a strong extract and placed inside the nostril. A positive reaction consists of edema and pallor of the nasal mucous membrane accompanied by itching, sneezing and rhinorrhea. (4) In the case of foods it is often necessary to resort to an elimination diet in order to determine what food is causing trouble. With this method, the patient is put on a diet limited to ten or twelve foods, the foods being selected so as to give all the essential food elements and to include only those foods which are least likely to cause symptoms. If the patient becomes free of symptoms on this diet, other foods are added, one at a time at five-day intervals, until the addition of some food produces symptoms. This food is then known to be the cause of trouble. (5) In the case of allergic dermatitis the scratch and intradermal tests are of no value and one may under these circumstances resort to the so-called contact test. The suspected materials, moistened if necessary with a little water, are placed upon the skin, covered with a small piece of gauze

or lint, which in turn is covered by a piece of rubber dam and bound in place by adhesive or bandage. At the end of twenty-four hours, the dressing is removed and a positive test recognized by the area of eczema produced.

Irrespective of whether reactions are positive or negative, the significance of any substance depends to a large extent on the history. A positive reaction to house dust or orris root cannot explain the significance of hay-fever occurring in September and October, nor can a positive reaction to orange be considered significant if the removal of oranges from the diet does not relieve symptoms and its addition produce them. In those cases where more than one manifestation of allergy is present, one must realize that different allergens may be responsible for each syndrome. For example, a patient may have fall hay-fever due to ragweed and dermatitis due to toilet water, or he may have hay-fever due to beef and fish, asthma due to house dust and eczema due to eggs.

Though the above description may seem discouraging to one unfamiliar with allergic methods, the truth of the matter is that one can accomplish a great deal without the use of allergens but by the application of common sense. By bearing in mind certain points in the history, a certain number of cases can be solved without testing.

For example, we know that hay-fever or asthma which recurs year after year about the first of September and lasts from six to eight weeks is, in all probability, due to ragweed pollen, while the symptoms occurring about the middle of April and lasting until the end of May are due to pecan pollen, and those lasting from May through September are due to grass pollen. We can readily presume that the person who develops asthma after a horseback ride or a visit to a stable is sensitive to horse dander and that one who develops symptoms on contact with a cat is sensitive to cat dander. A person who develops an attack of asthma after being in bed for some hours is very probably sensitive to the feathers in his pillow. A baker who develops an attack of hay-fever or asthma at work only is likely to be sensitive to the dust of his wheat flour. So also patients themselves may come to suspect

that the eating of much chocolate or nuts brings on symptoms of coryza, or that strawberries or spinach or fish cause urticaria. A child may begin to develop eczema shortly after eggs are added to its diet. A young lady may give a history of having applied dabs of toilet water to her neck and ear just before she broke out with a brownish, irritating rash on the areas treated. Of the utmost importance in solving the riddle of the cause of any allergic condition is a detailed history in which careful search is made for contact with offending substances.

TREATMENT

Treatment can be divided into two general classes—specific and non-specific. When the specific allergen responsible for the symptoms has been discovered, one may treat the patient by complete avoidance of contact with the substance or by desensitization if the former is impractical. The individual whose skin is sensitive to toilet water or rotogravure ink or wheat flour or chrysanthemum leaves may easily avoid contact with these substances. When vasomotor rhinitis is due to milk or asthma to rabbit hair, it is comparatively easy to avoid these substances and avoid an attack. A feather pillow may be replaced by cotton or kapok. A cotton mattress may be replaced by a special synthetic non-allergic material. Orris root may be avoided by using face powders which are free from this substance. Unfortunately, it is not possible to avoid all allergens and desensitization must then be resorted to. There is, in my opinion, a definite objection to most of the treatment sets that are on the market, particularly those in which each individual dose is put up in a separate vial. Some individuals may take as the first dose 0.1 cc. of a 1:100 solution of ragweed pollen, while another may have a generalized reaction consisting of hay-fever, asthma and urticaria following the injection of 0.1 cc. of a 1:1,000,000 solution. Some individuals can stand a rapid increase in the size of the doses whereas others react violently unless the dose is increased most gradually. Before giving the initial dose it is essential to test the individual either by the scratch or intradermal method with the different dilutions of the extract and to give as a first

dose 0.1 cc. of that dilution which fails to produce a reaction stronger than one plus. Subsequent increases in the dosage should depend entirely upon the effect produced by the preceding dose, the general scheme being to treat rapidly enough to get relief but slowly enough to prevent reactions.

Of the various non-specific remedies, adrenalin stands out as being far more valuable than any other single drug. In hay-fever and in asthma it will give prompt relief and it is unnecessary to produce the symptoms of nervousness so frequently encountered in order to get relief. The initial dose should never be more than 0.3 cc. in an adult and there should be no increase in the size of the dose as long as it affords relief. In a severe attack this amount of adrenalin is inadequate and it may be necessary to increase it to 0.5, 0.7 or even 1.0 cc. The size and frequency of the dosage may be determined with the following rule in mind: adrenalin should be given in doses large enough to relieve, yet small enough to avoid nervousness and it should be given often enough to prevent the recurrence of symptoms. I think it wise to instruct patients and nurses in the recognition of the earliest evidence of asthma so that adrenalin may be given promptly. I believe that the more asthma one has the more imminent is recurrence and that prevention of symptoms gives a certain immunity to future attacks. I believe also that attacks which have resisted ordinary treatment with adrenalin will quickly be terminated if the adrenalin is given often enough to keep symptoms completely in abeyance for two to three days. I have never seen a case of asthma that would not be, at least temporarily, relieved by adrenalin though I have known patients to require as much as 3.0 cc. for relief and others who have taken as much as an ounce in the course of twenty-four hours. In severe attacks these large doses do not produce the nervousness that occurs when even smaller doses are given in the absence of severe symptoms.

Adrenalin is also of value for intranasal application, the ordinary 1:1,000 solution being diluted 1/10 with saline and sprayed thoroughly into the nose. Physiologists insist that the shrinkage of the mucous membrane is soon followed by an increase in

the swelling and claim that ephedrine does not have this disadvantage. I believe, however, that dilute adrenalin sprayed into the nose of a patient with hay-fever or vasomotor rhinitis gives not only relief but tends to diminish the sensitiveness of the mucous membranes. The use of a plain mineral oil spray after the adrenalin seems to prolong the effect of the adrenalin and also serves as a mechanical protection against the offending allergen.

While ephedrine possesses the advantage of being effective when taken by mouth, it cannot compare in effectiveness with adrenalin. It may be used by a patient to afford relief when a doctor is not available but frequent doses of ephedrine do not seem to terminate an attack as effectively as does adrenalin. It must also be remembered that there are occasionally untoward effects from the use of ephedrine. I have seen one case of vasomotor rhinitis and eczema due to using ephedrine in a nasal spray and, in an asthmatic, ephedrine resulted in urinary retention which required catheterization for a period of two or three days.

For the dry, hacking cough which frequently follows an attack of asthma, potassium iodide in doses of ten to twenty-five grains three times a day seems to be of definite value. Ammonium chloride may also be used to loosen the cough and can be given in any of the syrupy cough mixtures. Codeine is of definite value in stopping an irritating cough. I have never seen any necessity for using morphine in the treatment of asthma.

The inhalation of stramonium powders affords relief to some asthmatics. Aspirin and whiskey seem to relieve others, but one must use aspirin carefully until it is certain that the patient is not sensitive to the drug since death has followed within five minutes the ingestion of five grains of aspirin by a person sensitive to it. Cocaine sprayed or applied to the nasal mucous membrane affords relief in some cases of asthma, but its habit-forming effect must be borne in mind and will frequently be found to outweigh its advantages.

In the treatment of the severe attack of asthma, excepting the use of adrenalin, there is nothing more valuable than bed rest, thorough cleansing of the intestinal

tract, and a very restricted diet such as sweetened orange juice or milk. The bedroom should be kept as free from dust as possible and smoking should be prohibited by the visitors. In the absence of definite knowledge of the cause of the asthma all atopic substances should be removed from the room.

Since specific therapy is not always possible, some form of non-specific protein therapy may be found to yield good results. Of these various measures, vaccine therapy is probably the most popular. In the selection of a vaccine one should make intradermal injections of the various organisms found in the respiratory tract and should use in treatment a mixture of those strains which produce, after twenty-four to forty-eight hours, the largest areas of redness and induration. If one objects to vaccines or if no vaccine reacts, one may use some other form of non-specific protein therapy such as milk. The fear of sensitizing an allergic individual to this important food element has convinced me that it is better to use goat's milk for this purpose rather than cow's milk. Auto-hemotherapy—the injection into the buttocks of a syringe of blood taken from the patient's veins—is probably a form of non-specific protein therapy and is of some value in the treatment of urticaria.

In asthmatics who have a chronic bronchitis with bronchiectasis, the intrabronchial instillation of lipiodol at weekly intervals is of definite value. The less expensive iodochloral may be used instead. In a cooperative patient it is possible to pour the oil directly from its container onto the back of the tongue and even without anesthetizing the pharynx get a large proportion of it into the bronchial tubes. On the other hand, even after thorough cocaineization, fluoroscopic examination shows a certain percentage in whom practically all of the oil has been swallowed and none has entered the bronchial tree.

Calcium seems to be of definite value in urticaria though I have seen no improvement from its use in hay-fever and asthma. The excellent results of nitro-hydrochloric acid by mouth—Beckman reported a rather number of hay-fever patients treated by this method—has not given beneficial results in my hands. Of the much vaunted

though highly unscientific, injection of dilute hydrochloric acid intravenously I can say nothing of praise.

The use of air-conditioning in the bedroom of the patient with hay-fever or asthma may prove of value in obstinate cases. Deep breathing exercises between attacks of asthma may make breathing easier during an attack.

I have not time to discuss in detail the various operative procedures which have been suggested in the treatment of hay-fever and asthma. Suffice it to say that I see no excuse for any operating on the thoracic sympathetic nerves, that operations on polyps and deflected septa and other mechanical obstructions are useless, but that foci of infection should be removed, not so much because of their effect on the allergic conditions as for their general effect on the individual's health.

In conclusion, I wish to say that common sense and good judgment is of as much value in the treatment of hay-fever and asthma as is a set of allergens and extensive equipment; that in the determination of the cause of any allergic manifestation the history is as important as skin tests; and that finally in the treatment of asthma, the three most valuable drugs are adrenalin, adrenalin, and adrenalin.

Relation of Allergy to Ophthalmology—1. The experimental work in ophthalmic allergy has been extensive and has established that the tissue of the eye reacts to certain irritants, such as tuberculin, blood serum, lens protein, uveal pigment, pollens, etc.

2. The skin of the lids, the conjunctiva, cornea, uveal pigment, and the lens are the structures of the eye most frequently involved in allergic reactions.

3. The response of the eye to the instillations of serum, pollen, and tuberculin is of diagnostic importance in general medicine.

4. The determination of hypersensitivity to lens protein and vitreous humor is of value in the examination of a cataract case preliminary to an operation.

5. Desensitization is of therapeutic interest.—*Zerfoss, J. Tennessee M. A. March '35.*

ABDOMINAL CONDITIONS IN INFANCY AND CHILDHOOD

DIFFERENTIAL DIAGNOSIS

By

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Though, at first consideration, my subject might seem to embrace a surgical discussion, it is also one of utmost importance to the pediatrician who so often sees the case initially and must be able to tell whether medical or surgical treatment is indicated.

Any pathologic condition within the abdomen of an infant or a child must be considered important in view of the high mortality rate in cases of incorrect diagnosis, or where treatment, be it surgical or medical, is delayed. Inflammation proceeds into suppuration, and obstruction into symptoms of toxemia very rapidly in early life.

CONGENITAL PYLORIC STENOSIS

This is not an uncommon condition in infancy. It occurs more commonly in the first born, and in 84.5 per cent of the cases the infants are males.¹ The symptoms start, as a rule, in the third week of life and are fairly uniform in character. One's attention is first attracted to the vomiting, which is projectile in character—the vomitus containing ingested food and gastric secretions only. It is important to remember that it does not contain bile. The presence of bile in the vomited materials is a strong indication that pyloric stenosis does not exist. In pyloric stenosis the stools become scanty and are composed largely of mucus, bile, and intestinal secretions rather than food elements. The infant loses weight and becomes dehydrated. On physical examination, peristaltic waves may be seen in the epigastrium running from left to right, except just before vomiting when they become reversed. Palpation may reveal at times an olive-shaped tumor just to the right of the midline and from just below the liver to occasionally as low as the level of the umbilicus. The moment just before or just after vomiting may be the only time the pyloric tumor can be readi-

ly felt. Some pediatricians insist upon a barium meal, followed by the roentgen ray, as an aid in making a diagnosis; others have abandoned its use as being unnecessary and undesirable because of its interference with convalescence.

Congenital conditions, such as atresia of the pylorus or stricture of the duodenum, may give rise to mistakes, but both of these malformations are extremely rare, and the latter exhibits biliary vomiting while the former is the cause of death in a few days. In both, the projectile vomiting begins in the very early days of life. In stenosis of the esophagus the food is regurgitated entirely unchanged, almost immediately after attempts at swallowing are made; and, even if dilatation of the esophagus is present and vomiting is somewhat delayed, there is no evidence of gastric digestion in the ejected matter. Valuable in the diagnosis of this condition is the roentgen ray, following the administration of barium. Acute gastritis may occasionally be mistaken for congenital pyloric stenosis, but the absence of projectile vomiting, constipation, and visible peristaltic waves with palpable tumor serves to differentiate this condition from pyloric stenosis.

INTUSSUSCEPTION

Intussusception constitutes one of the major emergencies of pediatric practice. If this discussion serves no other purpose than to familiarize one with this very important condition, it will have been useful. Successful treatment is dependent more upon an early diagnosis than upon any other factor, provided reasonably skillful surgery is employed.

Intussusception is an invaginating of the bowel into itself. The mechanism of its production is interesting, but a discussion of this does not concern us at this time. It consists of two portions: the portion of the bowel which is intussuscepted, the so-called intussusceptum, and that portion of the bowel into which the intussusception occurs, the so-called intussusciens. Intussusception almost universally occurs in a downward direction. Strangulation of the intussusceptum rapidly occurs, with interference with the blood supply and thrombosis of the blood vessels. This leads rapidly to gangrene, a condition which is high-

1. Ladd, William E.: The acute surgical abdomen in children, Penn. M. J. 24: 153.

ly fatal in tiny babies.² There are four varieties:

1. The ileocolic. This is the most frequent.
2. The ileocecal.
3. The colic.
4. The enteric.

Intussusception is essentially a disease of infancy, and about 70 per cent of the cases occur during the first year of life. The children are usually well nourished and in the best of health.

Let us consider the symptoms. A previously healthy child, usually a boy, is suddenly seized with acute abdominal pain, causing him to scream, draw up his legs and vomit. The temperature is usually subnormal. The child then seems improved for a time, but awakens a little later with another fit of screaming. These attacks of screaming and vomiting continue periodically. Within a few hours, blood is noticed in the bowel movements. There may be one or two normal actions at first, but when the lower bowel is empty blood and mucus alone are passed. On examination we usually find a well-nourished child, who is apparently extremely ill. Later he becomes placid, with eyes sunken and staring. He cries out faintly when disturbed or when the spasms of pain come on. A sausage-shaped soft tumor can be felt in at least 60 per cent of cases.³ A rectal examination is very valuable in order to localize the tumor. There is no rigidity of the abdominal wall and distention is not seen until the later stages, but peristalsis is occasionally visible. Blood is not passed until the very late stage in the enteric type, and occasionally vomiting is absent entirely. The colic type is less acute always.

Enteritis furnishes the main difficulty in diagnosis. Both conditions affect babies, both may be preceded by digestive disturbances, and in both blood and mucus are passed. However, the onset of intussusception is sudden, while that of enteritis is gradual. Shock develops early in intussus-

ception and is marked, while in enteritis collapse is late. A sausage-shaped tumor is present in a large percentage of intussusception cases. In intussusception the right iliac fossa is usually empty, while in enteritis the cecum is frequently distended. Pain, of course, is much more severe in intussusception. Henock's purpura is a rare disease, but when the rash is absent it may give rise to difficulty. However, as long as intestinal contents are mixed with blood an intussusception is unlikely.

ACUTE APPENDICITIS

While appendicitis may occur at any age, it is rare in infancy, but is more common after the seventh year. The great difficulty in children is recognition of the disease in its early stages, and the younger the child the more difficult it is.

The child is seized with abdominal pain, perhaps not severe in the early stages and only enough to make him irritable. Vomiting is often an early symptom, but frequently after once or twice at the onset he does not vomit again for two or three days, and then it becomes more or less continuous. The temperature is usually elevated, but as a rule does not exceed 102 degrees. A rising pulse rate in a child has considerably more significance than in an adult.

The child is flushed. The tongue is coated and later dry. A great deal can be learned by gentle palpation of the abdomen, leaving, of course, the right lower quadrant until last. If pain is present the child may be able to tell you about it, but if he is not observation of the child's facial expression may tell the story. Rigidity, or a mass, may be felt as in an adult. The combined recto-abdominal examination is very valuable and should be used in all cases.

Acute appendicitis must be differentiated from enteritis, thoracic disease, pyelitis, tuberculous peritonitis, typhoid fever, pneumococcal peritonitis, and abdominal pain due to inflamed and enlarged mesenteric and retroperitoneal glands.

Enteritis: The condition of the bowels in appendicitis is inconstant, but the attack may be preceded by constipation or ushered in by diarrhea. Diarrhea, however, is seldom so marked as in enteritis, the stools containing less mucus and very seldom blood. True rigidity does not occur in en-

2. Shannon, W. Ray: Early diagnosis of intussusception in children, *Minnesota Med.* 2: 221-226 (April) '28.

3. Raison, C. A.: The acute abdomen in the child, *Birmingham (England) Med. Rev.* 2: 169-183 (May) '27.

teritis, although vomiting and abdominal pain may be present. Acetone may be detected in the breath and upon examination of the urine much earlier in enteritis than in appendicitis.

Thoracic Disease: Fever, increased pulse rate, vomiting, pain, tenderness, and even rigidity in the right iliac fossa may all be present in early pneumonia, and pleurisy, especially diaphragmatic. The increased respiratory rate, the diminution in the pulse, the higher temperature, and the much more increased leucocyte count in pneumonia are good differential points. In thoracic disease abdominal resistance is generally greatly relaxed during inspiration, but is maintained in appendicitis. If any of these conditions are present, a careful chest examination should be made; and if there is any doubt an x-ray examination should be done, as it is by this means only that a beginning central pneumonia can be determined.⁴

Pyelitis: Cases of pyelitis may be mistaken for acute abdominal infections. In pyelitis the onset is sudden, but there is a history of indefinite abdominal pain. The child, usually a girl, has a chill, and fever soon appears. The temperature reaches 101 to 105 degrees. A temperature of over 102 degrees should make one suspect pyelitis. The child looks ill, out of all proportion to the abdominal signs, and, in addition, there is a marked degree of general irritability, increased frequency of micturition, and sometimes dysuria. The child, when ill with pyelitis, usually calls for plenty of water, and this may be of importance in the diagnosis. The abdomen may be tender, but there is no real rigidity. In older children the maximum tenderness may be detected in the kidney region posteriorly, but this should not be mistaken for the tenderness and even rigidity met with in a retrocecal appendix. The urine should always be examined. Pyelitis occasionally complicates appendicitis. Frequency of micturition may be due to an inflamed appendix adhering to the bladder, or it may indicate an accompanying pyelitis. The tip of a gangrenous retrocecal appendix lying on the hilum of the right kid-

ney is very likely to give rise to frequency of urination.

Tuberculous Peritonitis: The clinical picture is very similar to one of acute appendicitis, but one usually finds that the child has been ill for some time. A careful history and a well executed physical examination, together with a tuberculin test and x-ray examination, will serve to make the diagnosis.

Typhoid Fever: The onset in typhoid is less acute. The temperature course, the absence of leucocytosis, blood and stool cultures, the enlarged spleen, and, later, the appearance of the typical roseola and the Widal reaction will help in the differentiation.

Pneumococcal Peritonitis: This condition is much rarer than appendicitis. It most usually follows some type of respiratory infection, and is usually seen in girls. A leucocyte count of 30,000 to 50,000 is common. Probably the most important diagnostic sign is that the child is extremely ill, and general symptoms predominate over local abdominal signs.

Abdominal pain may follow infections of the upper respiratory tract.⁵ The tenderness and rigidity are, however, not so marked in this condition, and the association of the pain with an infection of the throat, ear, and nasal sinuses is a helpful differential point. Brennemann pointed out that while abdominal pain may result from an infected throat it is also possible that appendicitis may complicate such a condition. He says, "I should like to state very emphatically that while non-appendiceal abdominal pains are much more frequent as an accompaniment of throat infections in children than are those due to an inflamed appendix, this fact should not at any time stand in the way of a diagnosis of appendicitis, if convincing symptoms of appendicitis are present. Possibly, indeed, a simultaneous, or preceding, throat infection should make us rather incline toward that diagnosis than away from it."⁶

4. Griffith and Mitche'l: Text, Diseases of Infants and Children, 2: 184.

5. Brennemann, Joseph: Abdominal pain due to inflamed and enlarged mesenteric and retroperitoneal glands, Am. J. Dis. Child. 22: 493, 1921.

6. Brennemann, Joseph: Abdominal pain of throat infections in children, and appendicitis, J. A. M. A. 89: 2183-86.

INFLAMMATION OF MECKEL'S DIVERTICULUM

In the lower ileum about twenty inches above the ileocecal valve the remains of a fetal structure, the vitello-intestinal duct, known as Meckel's diverticulum is found.⁷ Ordinarily, this fetal structure disappears about the seventh week of embryonic life, but in two per cent of individuals some evidence of it is found in postnatal life. Often it is only a small pouch about the size of a thimble with a wall having the same coats as the bowel proper. It may undergo inflammation which may terminate in gangrene. In such cases the clinical picture is almost identical with that of appendicitis except that the pain and localized tenderness are often nearer or to the left of the umbilicus. In other individuals Meckel's diverticulum may be only a small button-like structure in the wall of the ileum, sometimes cystic in character. In those cases it is often the starting point of an intussusception. In other instances the fetal duct degenerates into a fibrous cord extending from the ileum to the umbilicus. A loop of bowel will frequently get twisted around this cord and become strangulated. Occasionally, a portion of the duct leading down from the navel may persist as a mucous-lined sinus which discharges constantly at the navel. Even more rarely, the entire tract from bowel to the navel is present, in which cases fecal matter is discharged on the abdominal wall. Obviously Meckel's diverticulum must be thought of in every case of a discharging sinus at the navel. As Meckel's diverticulum is lined with mucous membrane it may be the seat of an ulcer. Abt has reported several of these cases, and the condition should be thought of in children, who are chronically ill, with bloody stools and some tenderness at the navel.

INTESTINAL OBSTRUCTION OTHER THAN
INTUSSUSCEPTION

I shall group obstruction from bands, volvulus, strangulated hernia, etc., under one heading, as these conditions, with the exception of strangulated hernia, can rarely be differentiated. The important question to answer is, "Has the child obstruc-

tion?" We must try to arrive at a definite decision at the earliest possible moment, and then promptly advise operation. The four cardinal symptoms are: (1) colicky pains; (2) persistent vomiting; (3) absolute constipation; and (4) increased peristalsis.

TRANSPERITONEAL REMOVAL OF
AN UNUSUAL MALIGNANT TUMOR
OF THE RIGHT KIDNEY

By

R. V. TAYLOR, JR.
Mobile, Alabama

On June 25, 1934, the patient, a female, age 52, came to Mobile from Chapman, Alabama, in an extremely ill condition. She had lost weight rapidly, was running a temperature ranging from 103 to 105 degrees, and was carried at once to the hospital in an ambulance.

The essential points of her history were that for two or three years she had known there was a deep mass in her right abdomen, which, during the last three or four months was rapidly enlarging. On at least one occasion she had noticed blood in her urine; and, on examination, her urine was found to be loaded with pus. Her red cells were 3,800,000 and whites 10,500. The hemoglobin had dropped to 45%. After rest in bed on hospital medical treatment for three days, her temperature subsided. A blood transfusion was given—500 cc. of citrated blood from an accurately matched donor, group II. A colon ray showed the ascending colon pushed completely out of its place, down into the pelvis, making it clear that the tumor was definitely not involving the lumen of the bowel. In view of the accuracy of the diagnosis, and the weak condition of the patient, it was decided not to make any further urologic study. The appendix was already out, and there was a large, densely fixed tumor, about the size of a large cantaloup, in the region of the right kidney.

In order to allow of an adequate investigation of the abdominal contents it was decided, under the open method of ether anesthesia, to approach the tumor through a long right rectus incision, which passed down through the former appendectomy scar. The liver, gallbladder, stomach, duo-

7. Montgomery, A. A.: Intussusception and some other surgical conditions of the abdomen in children, Nebraska M. J. 15: 21-26 (Jan.) '30.

denum, colon, and pelvic organs were all in turn carefully examined, with no evidence whatever of any malignancy. The tumor presented from behind the peritoneum just below the gallbladder. With everything meticulously packed off, a deliberate incision was made in the posterior peritoneum to see if the tumor could be removed. The examining hand soon ascertained that the tumor was solid in consistency, but also there were multiple cystic nodules, with only a very thin cortical covering. In spite of every precaution, one of these cysts ruptured, discharging a milky fluid, which was sponged out immediately, hoping to prevent extensive seeding of the perirenal regions. This ruptured cyst was unfortunate, in a way, but it allowed enough shrinking of the tumor to make its removal possible. With great care not to injure the deep terminal portion of the duodenum, the pedicle was finally doubly ligated, having separated the vein from the artery, and the ureter was stripped as low down as possible. The end of the ligated ureter was treated with carbolic acid and alcohol, and whipped over with a catgut suture. Five drains were left in place, three above, and two below.

The patient made an uneventful recovery, leaving the hospital on the 14th day. The drains came out the 8th day, without there having been any drainage, and the wound healed by primary union. The patient went back to Chapman on the 21st day, eating and sleeping normally, and voiding clear urine.

On section the tumor showed multiple cystic masses, from one of which exuded pure creamy pus. There were at least five hard areas in the parenchymatous kidney tissue that were undoubtedly malignant. There was no involvement of the pelvis microscopically. This fact is of interest in view of the following report from Dr. John A. Lanford, Pathologist of the Touro Infirmary, New Orleans, La.

"The histology of the tumor from the kidney is quite unusual, and I believe that it is the first one in this location that I have ever seen. Careful study of the section shows that the component cells are attempting to differentiate into transitional epithelium, and here and there can be noted on careful study groups arranged very sim-

ilar to transitional cell carcinoma of the bladder. I believe, however, that this tumor had its origin in the pelvic epithelium of the kidney.

"Ewing mentions papilloma and papillary carcinoma of the pelvis of the kidney, but he does not go to the trouble of describing it as far as I can see in my book.

"The outlook is rather unfavorable, but I do not believe that it is entirely hopeless, unless the operative field was seeded during the removal."

Radium in Uterine Body Cancer—The very favorable results obtained in the treatment of a series of uterine body cancers in patients who were poor surgical risks, has raised the question in my mind as to the advisability of depending upon radium in the treatment of cancer of the uterine body. I we'll remember how questionable it was some years ago to depend upon radiation in cancer of the cervix. Radium and x-ray have established their places now in the treatment of all cervical cancers early or advanced.

There may be still a few surgeons who advocate operating upon cervical cancers, and we find some who speak of operating after radiation or advocate postoperative radiation. Practically all well informed clinics have abandoned the operation entirely, and depend upon radium and x-ray radiation. My own view is that operative procedures in cancer of the cervix are bad practice. Radium and x-ray radiation will do all that it is possible to do in cervical cancer and with no operative mortality.

Hysterectomy for uterine body cancer has given such favorable results that the profession has been slow to take up a new agent, but are we not now in the position in reference to cancer of the body that we were in a few years ago concerning cancer of the cervix? I think we are, and hence I have ventured to discuss the use of radium in cancer of the uterine body in both early and advanced cases.

I believe that we have learned enough about the use of radium and x-ray to use them effectively and yet avoid many of the dangers that confronted us in their earlier use. Experience has shown that cancer cells can be definitely destroyed by radium and x-ray radiation, just as certainly as they can be destroyed by the cautery.—*Moore, Texas State J. Med., Mar. '35.*

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DIPHTHERIA IMMUNIZATION

The immunization of young children against diphtheria is not proceeding as well as it should in Alabama or in the United States as a whole. This is evidenced by the fact that the mortality and morbidity rates of the disease have become stationary in recent years and have even shown a slight increase in 1934. In other words immunization is not keeping up with the birth rate.

It is a self evident fact that no effective program of immunization can be instituted unless there is healthy and understanding cooperation on the part of State, County, and City health departments, with the doctors and parents. No one can say that our health departments have not done their utmost to bring about this cooperation and the more intelligent parents realize the necessity of giving their children the benefit of this phase of preventive medicine. The same thing is true of Parent-Teacher Associations and other groups concerned with child health. Unfortunately most of this effort is concentrated on the child of pre-school age and not on the infant during the last half of its first year. If the mortality

rate of diphtheria is to be materially reduced it is absolutely necessary that infants be immunized before reaching the age of one year, since most of the deaths occur in children under three years of age. It is here that the aid and active cooperation of the medical profession is imperative. It is not enough to adopt a passive attitude of immunization upon request, but rather an active one of urging mothers to bring their babies to the physician between the ages of six months and one year.

The doctors of Alabama should take pride in the fact that the one-dose alum-precipitated toxoid was developed and perfected by Havens and his co-workers in the laboratories of their own State Department of Health. This is the simplest and most effective method of immunization in use today and it confers immunity on approximately 98 per cent of those receiving it. The product is manufactured in the Laboratories of the State Department of Health and is available to all physicians in the State without cost.

The May Day Committee of the State and Provincial Health Authorities of North America has chosen diphtheria immunization for this year's May Day project. Enthusiastic approval of this has been obtained from health officers of the various states and also from the officers of the American Academy of Pediatrics and the American Pediatric Society. The objective of the plan is to enlist the aid of all doctors in immunization of all children between the ages of six months and six years and to maintain this as a continuing service, to the end that diphtheria may be completely eradicated as a cause of death. Concerted action on the part of departments of health, doctors, and parents can make this objective possible, but the family physician must realize that the responsibility rests with him to urge on his patients that this necessary measure be carried out.

A. A. W.

UNDULANT FEVER

"While we are not justified in calling undulant fever a new disease in this country, there is no doubt that of late there has been a great increase in its incidence. This I believe can be explained only in part by

new interest in and consequent recognition of this disease." Thus does Miller¹ begin his excellent article on undulant fever which was published recently. In reviewing the history of this disease, Miller reminds us that Sir David Bruce, in Malta in 1886, discovered the organism that later proved to be the etiologic agent. He further states that it was twenty years later before the goat was recognized as the host. "The bovine strain is responsible for undulant fever in most city dwellers through the ingestion of infected milk. In packing house workers and among farmers, the suis variety is not infrequent, probably from contact infections."

Horses, chickens, sheep and, more rarely, other animals have also been proved to be the source of infection. "There is abundant evidence that the agglutination test may be positive in the absence of any previous clinical manifestations." Healthy veterinarians and packing house employees frequently show a high incidence of positive tests. In Nebraska, of 1,000 sera submitted for Wassermanns 4.3 per cent were positive for *Brucella*. In one epidemic in a boys' school "only 2 per cent of those infected had symptoms; the others were unaffected by the infection. If this be true, generally not more than 2 per cent of infected individuals are ill."

The period of incubation varies from five to fifteen days. "The type of fever is extremely variable except that it always shows considerable daily fluctuation. The typical textbook wave-like undulating fever is not common."

"A prolonged septic type of fever often with intermissions, arthralgia, profuse sweating and intermittent gastric distress—when all are present—make it highly probable that the patient has undulant fever, even in the absence of a positive agglutination." A positive agglutination test is not always constant and may disappear after six or more months. Miller contends that too much reliance has been placed upon this reaction and states that it has been repeatedly shown that patients with undulant fever may have a positive blood culture and a negative agglutination. "The

lesson to be learned from this is not to accept a positive agglutination if the patient's symptoms are not in accord with this diagnosis." Blood cultures, when positive, establish the diagnosis, but can be obtained only in about 25 per cent of the cases.

"The leukocytes may be normal, or slightly increased in number, or there may be a leukopenia. The relative or absolute decrease in the polymorphonuclear cells is of value when present but is not constant."

"The mortality, if we were able to recognize subclinical cases, would be extremely low. In recognized cases, it will average about 3 per cent."

As regards therapy, there is no proved satisfactory method of treatment and, therefore, treatment must remain symptomatic until more light is shed upon this disease.

Miller concludes by saying, in part, that the incidence of this disease is probably much higher than reported cases would indicate, and that the best preventive measure is pasteurization of milk. Miller's excellent presentation of this subject furnishes yet more evidence that will be difficult to controvert by those who, through thoughtless economy, would shackle our health departments, both state and local.

UNNECESSARY RABIES TREATMENTS

A recent rabies scare in one of the counties caused a large number of individuals to take treatment. In this instance many of them had come in contact with a child who developed the disease. In all probability many of these treatments were unnecessary.

These scares occur regularly and, with them, unreasoning hysteria develops. The physicians of the State are urged to treat many of these cases psychologically where it is indicated, rather than with the vaccine. Too much emphasis cannot be placed on the possible appearance of post-vaccinal paralysis, although fortunately it has been rare up to now in Alabama.

¹Miller, Joseph L.: Undulant fever, *Ann. of Int. Med.* 8: 570 (November) 1934.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.,
State Health Officer in Charge
COUNTY COMBINATIONS FOR HEALTH
WORK

An appreciation of the need for a thorough revamping of existing governmental machinery, both state and local, in the interest of economy and efficiency, is keenly felt on all sides. The difficulties and obstacles—both political and geographical—accompanying efforts directed to this end are many and real. It is highly important that those having responsibility for the shaping of the broad policies for administering any particular governmental activity on a state-wide basis—such as the public health—should possess not only a comprehensive understanding of the activity itself in all its phases, but also of the State's needs for such service as well as how such needs can best be met. It is important also to bear in mind that Alabama's population is still predominantly rural (70%) and that in these vast rural stretches the basic problems of sanitation, safe water, and screening—problems which no longer threaten city dwellers—are still far from being completely solved. Furthermore, any broad administrative plan must incorporate adequate machinery for the feeding to these rural areas of the essentials in public health necessary for their economic and healthful advancement. Alabama's plan of health administration has been built up and developed with the prime purpose of dispensing these basic health needs through full-time employees and with the political subdivision—the county—as the logical unit of application. The rapid and steady growth of this system—rising from zero in 1913 to 54 in 1931 (a period of 18 years)—has been one of the outstanding accomplishments in health administration in this or any other country and its workability, its worthwhileness and its soundness seem amply proven.

Let us ask ourselves two questions:—

(a) To what extent, in the field of public health, might the administrative principles thus far successfully developed on a strictly county basis be further expanded to include larger geographical and population areas? and,

(b) In so doing, what advantages might be expected to accrue from the standpoint of economy and efficiency of operation?

In any consideration of county combinations for health work proper regard must be had for:

- (a) Population area.
- (b) Transportation facilities and distances to be covered.
- (d) Particular health needs within the area and the necessary trained personnel to deliver such service.
- (e) Local financial resources of the area served.

The smallest properly-balanced full-time health unit for each individual county, considered as satisfactory, is made up of four pieces of personnel; namely, a county health officer, a nurse, a sanitation officer and a secretary.

The population of the average, rural, county in Alabama is around 30,000; but many of these counties, because of reduced finances, have never been able to provide a sanitation officer; consequently, as much of this work as possible has been done in the county by a limited personnel furnished out of the central office. The health officer is not only the administrative head of the unit serving the county, but, of necessity, must actually perform much of the service rendered, such as the medical examination of the pupils in all schools (this important service to the schools forms the justification for the contributions made by education to the health work in certain counties), the giving of immunisation for diphtheria and typhoid fever and the control and direction of contagious and communicable diseases, besides many other services of a purely medical nature which cannot be delegated to others of his staff. If the distances to be covered in the performance of these duties are great, one sees what a large proportion of time is consumed in the *unproductive factor of travel*. Consequently, it is felt that, at the present stage of development, both of health work and of road building, the inclusion of too large areas would make neither for efficiency nor for much economy; however, at several points within the State, and more particularly in the Tennessee River basin, where transportation facilities have progressed further, we feel that either a tri-county or bi-county grouping might be experimented with as far as *local political* conditions will permit. Take, for example, the two large counties of Madison with a

population of 64,623 and Jackson with a population of 36,881, or a total population of 101,504 to be served and a large territory to be covered. The medical officer in charge would likely have to have a medical assistant; each county, at least for a while, would have to maintain a health rallying centre, with a nurse and secretary with whom the people could make contacts and be in a measure served; one sanitation officer could hardly serve adequately so large and important a territory. These are but some of the things to be given consideration in the dispensing of rural health service. At present, the State Health Officer is working on the possibility of several bi-county combinations where conditions seem to offer fair promise of success.

In this connection, also, attention is directed to paragraph 6, Section 1062 of the Code of Alabama, which provides for just such possible combinations and districting for health work as is here presented, if and when such combinations seem to point to greater efficiency and economy.

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

CARRIER SURVEYS FOR CEREBROSPINAL MENINGITIS

A recent survey for carriers of cerebrospinal meningitis which was conducted at the Transient Bureau Camp at Fort Morgan illustrates certain important points about this disease. Approximately 800 men were swabbed and of this number only eight were found to harbor the organism in the nasopharynx. This is one per cent and it is generally conceded that until the carrier rate reaches 20 per cent there is little danger.

Cerebrospinal meningitis is a cold weather disease. During the winter months of the year sporadic cases occur in many communities, and it is known that apparently healthy carriers are the cause of its spread. Crowding especially facilitates its passage from one individual to another. The experience of our troops in cantonments during the World War is an excellent illustration of this. Our present Transient Bureaus with a mobile body of men and restriction of space offer a good opportunity for the spread of cerebrospinal meningitis. However, unless an unusual number of ca-

ses occur in one place there is little cause for alarm. According to information received from the United States Public Health Service, cases have appeared in various Transient Bureaus throughout the country, but, when careful investigations were made, it was generally found that an equal or comparable number of patients could be located in the town where the Bureau was situated. Cerebrospinal meningitis is to be expected when the temperature is low and carrier surveys should not be requested unless there is sufficient evidence that an epidemic is impending.

From the laboratory point of view a carrier survey for the meningococcus is a most difficult procedure, if properly performed. Outside of the fact that the results will be useless unless the swabs are taken directly from the nasopharynx uncontaminated with saliva, there is the added difficulty of keeping the plates warm at the time the inoculation is made—which must be immediately after the swab is taken—and until they are placed in the incubator. Cultures cannot be made from the swabs which arrive in the mails because the meningococcus is a fragile organism, living only a short time outside the human body unless placed on the proper medium which has been carefully warmed. Under field conditions, especially since these surveys are always run during cold weather, this is a difficult proposition. The Bureau of Laboratories has used fireless cookers for this purpose but their relatively large size for the number of plates which they will accommodate make them undesirable. Specially designed insulated cases which may be kept warm indefinitely under field conditions are at present being designed.

During the survey at Fort Morgan a simplified technic was employed. At this time no attempt was made to transfer the suspicious colonies on the plates to blood agar slants. Slide agglutinations were run using antimeningococcus and normal horse serums. Those giving the typical serologic reactions were Gram stained, and a Gram-negative biscuit shaped diplococcus, when found, completed the diagnosis. The necessity of the Gram stain was demonstrated by the fact that two different species of Gram-negative bacilli gave typical agglutination reactions.

BUREAU OF PREVENTABLE
DISEASE CONTROL

D. G. Gill, M. D., Director

IMMUNIZE NOW

STAMP OUT DIPHTHERIA

May Day—Child Health Day—has become an established institution throughout the United States. It was inaugurated in 1924 by the American Child Health Association for the purpose of calling the attention of parents, communities, and the public in general to the need for measures to protect the health of children.

In 1928 the United States Congress passed a joint resolution designating May first as Child Health Day, and authorizing the President to issue a proclamation requesting national observance of the day. In 1929 the Conference of State and Provincial Health Authorities of North America appointed a May Day Committee. In 1932 this Committee took over from the American Child Health Association, with the continuing assistance of that Association, the responsibility for the annual observance of Child Health Day. In the states the work is under the direction of State Departments of Health.

Child Health Day celebrations are intended only to mark and emphasize either the inauguration or the culminating of year-round work for improvement of the health of children. The project for 1935 is diphtheria immunization. This was chosen because there has been but little reduction since 1930 in the number of deaths from diphtheria throughout the country. While particular emphasis will be laid on immunization this year, it is not intended that the project be limited to 1935. On the contrary one of the chief objectives is to have the work continued year after year by the medical profession. Immunize now—stamp out diphtheria, is the slogan.

The measures proposed are:

To immunize all children between the ages of six months and six years.

To make early immunization a routine practice by all physicians.

The majority of pediatricians do immunize the babies under their care during the first year of life. Physicians in general practice also should follow this procedure.

State Departments of Health and the unofficial organizations interested in children are calling the attention of parents and communities to the need for early diphtheria immunization. Each individual physician should be prepared to take care of the applications for immunization. Cooperative plans for this work should be made by the local medical societies and departments of health in all communities. When a local medical society has perfected plans for this phase of preventive medicine, there is no reason why it would not be possible to assume gradually other types until eventually preventive medicine forms an important part of the practice of all physicians.

This project offers opportunity for many medical societies and many physicians to assume their rightful leadership in the preventive medical work of their communities.

Descriptions of the plans of certain medical societies for community child health work will be found in

The Experiments of the Medical Society of New Jersey in Furnishing Community Health Service. Section on "The Public Health Hour". p. 162.

LeRoy A. Wilkes, M. D., Executive Secretary, Medical Society of New Jersey. American Medical Association Bulletin, December, 1934.

The Children's Hour. Nassau Medical News, December 1934. Reprinted in Westchester's Health, February 11, 1935. Published by the Westchester County Department of Health, White Plains, New York.

What the Detroit Plan Offers.

Henry F. Vaughan, Dr. P. H., Health Commissioner, Detroit. Reprinted from the December 1933 issue of Medical Economics.

THE PRINCIPLES OF TREATMENT IN
EARLY SYPHILIS

1. There should be no shortened or "abortive" courses, regardless of the stage at which treatment is begun. When once treatment is begun always follow through.

2. Begin the treatment in the seronegative primary stage. There is one-third greater prospect of cure. Do not attempt "provocatives", therapeutic tests, nor to wait for secondaries.

3. Do not give less than twenty, and preferably nearer forty injections of arsphenamine or neoarsphenamine, accompanied by a heavy metal (bismuth or mercury).

4. Treat continuously without full rest periods. The patient ought to be under the

influence of either arsenic or a heavy metal, or both, all the time for at least one and one-half years, or for at least one year after all signs and symptoms of the disease have disappeared. Rest periods are dangerous. Do not try to make up for irregularity by overdosage. Do not *underdose* except for the first three injections.

5. The first dose ought never to exceed 0.3 gram of salvarsan, or neosalvarsan. It is well to give this small dosage for the next two injections. The first three injections may be given in 10 days. After then the interval between neosalvarsan, or salvarsan, injections should be one week.

6. All patients should be given a thorough examination before beginning treatment. This ought to include the examination of eyes and ears, and the urine.

7. If the eye or ear symptoms are pronounced it is well to give 2-3 bismuth treatments first.

8. Watch *yourself* the progress and disappearance of the visible lesions while under treatment.

9. It is wisest and best to use a combined treatment. Never use one drug exclusively. Never end a course with neosalvarsan or salvarsan. Never substitute bismuth for an arsphenamine unless intolerance forces you to do it.

10. Bismuth should be given preference over mercury in the combined treatment.

To be continued in the May issue.

BUREAU OF SANITATION

G. H. Hazlehurst
Director

AMENDED MILK REGULATIONS

The State Board of Health regulations governing the production, handling, and sale of milk and certain milk products were amended by the State Committee of Public Health last September. The object of these amendments was to clarify certain of the legal terminology, and to incorporate provisions made necessary by progressive changes in milk production and handling practices, and improvements in milk-handling equipment.

The specifications for Grade A Raw Milk have been made somewhat more stringent, in that milk houses must be partitioned to separate bottle and utensil cleaning opera-

tions from milk cooling and bottling operations, must have water piped into them, and must be provided with stationary wash and rinse vats. Milk handled in a milk house to which water is carried in buckets, and in which tubs set on boxes serve as wash vats (and are possibly used to wash clothes at other times) cannot really be said to be of the safest quality. Milk bottles must be capped mechanically. The dairy premises must be kept neat and clean.

Other amendments provide that all milk which is sold, whether from 50-cow herds or from one cow, is subject to the provisions of the regulations, that country butter-milk peddlers must first obtain a permit and meet certain reasonable requirements, that permits must be signed jointly by the County Health Officer and the State Health Officer, that the average bacterial plate count limit for Grade A Pasteurized Milk is 30,000 per cubic centimeter instead of 50,000 per cubic centimeter, and that grades of all milk supplies shall be determined progressively on the last two inspection reports and the last four consecutive thermometer readings and bacterial plate counts.

These regulations are not effective in any part of the State until they have been adopted by the County Board of Health. Even then they are not effective in any community until the city council or commission adopts a short ordinance declaring these regulations effective within the city and its police jurisdiction. The publication of this short ordinance is not a serious item of expense, as compared with the publication of the regulations in their entirety, in the form of an ordinance.

These regulations have been adopted by the Russell County Board of Health, Dec. 4, 1934, for Phenix City, which has not yet acted; by the Etowah County Board of Health, Nov. 30, 1934, for Gadsden and Attalla, and the ordinance was passed by Gadsden on Jan. 22, 1935; and by the Marshall County Board of Health on Feb. 13, 1935.

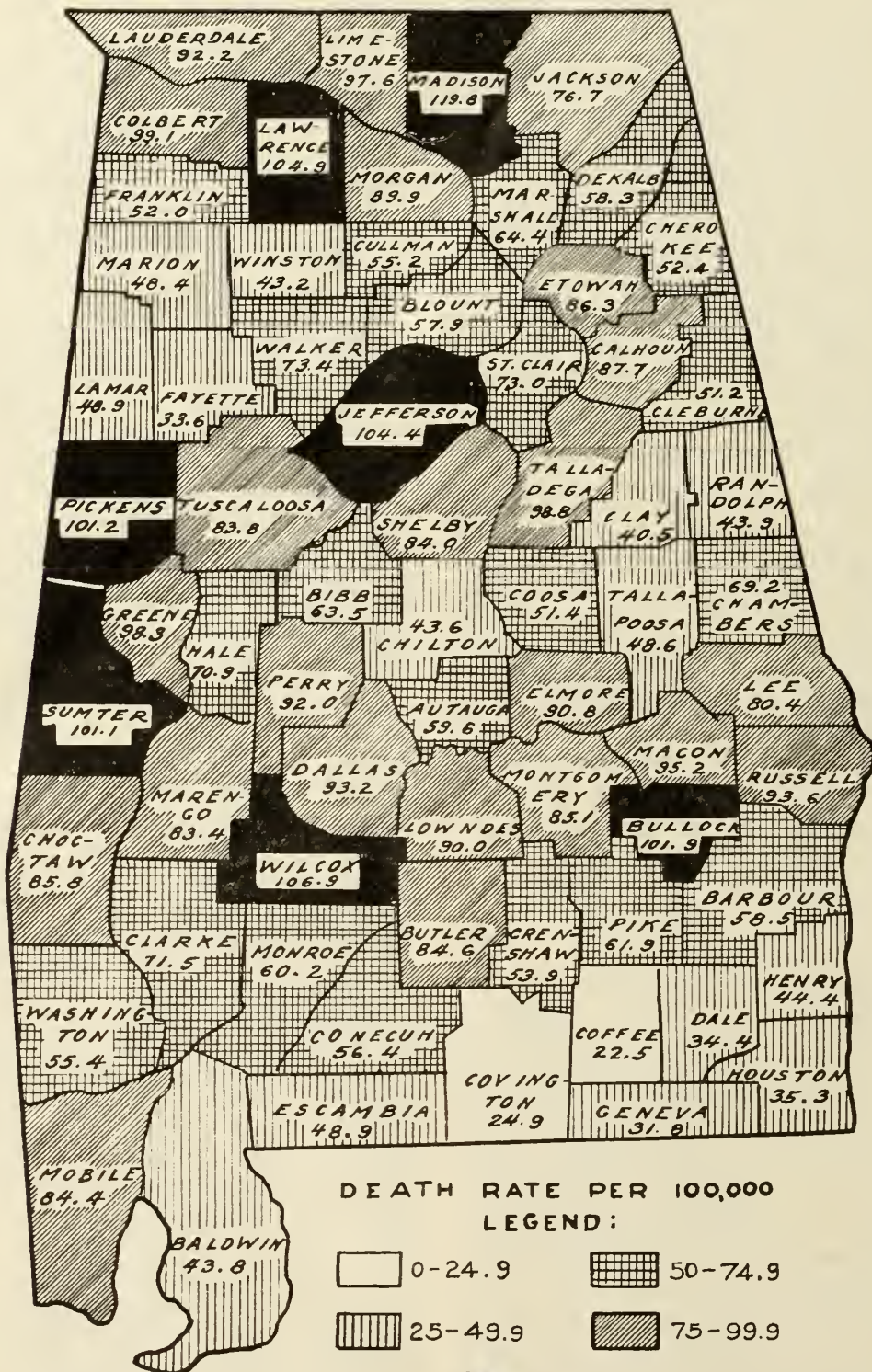
The Gadsden ordinance becomes effective July 22, 1935, and a program of enforcement of the permit requirements on neighborhood dairies and country butter-milk peddlers is being organized.

C. A. A.

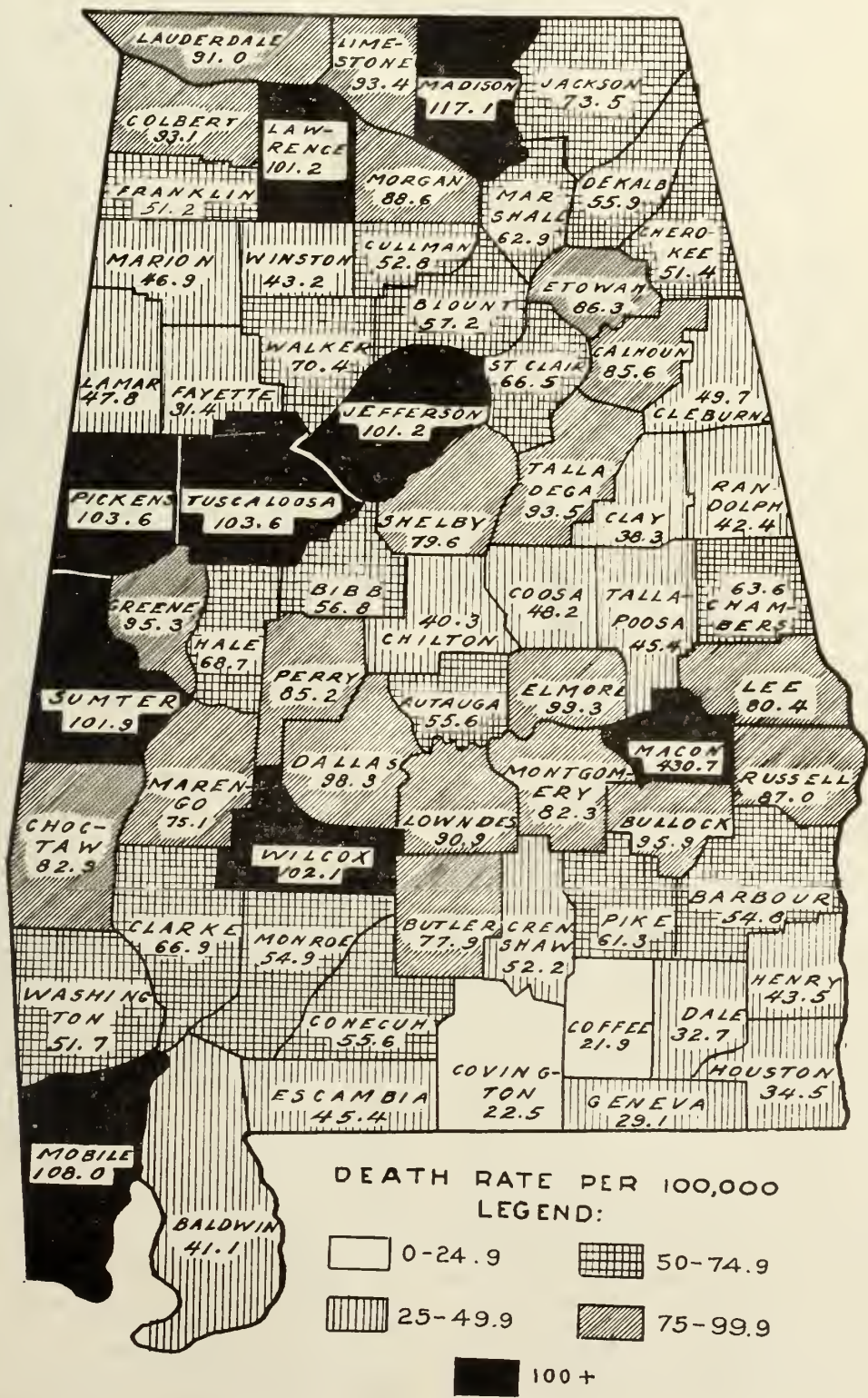
BUREAU OF VITAL STATISTICS

L. V. Phelps, Director

Mean Annual Resident Death Rates Per 100,000 Population From Tuberculosis (All Forms) According to County—Alabama: 1929-1933



Mean Annual Recorded Death Rates Per 100,000 Population From Tuberculosis (All Forms) According to County—Alabama: 1929-1933



Book Abstracts and Reviews

Sculpture in The Living: By Jacques W. Maliniak, M. D., Formerly Major, Reconstructive Hospitals, Allied Armies; Attending Plastic and Reconstructive Surgeon at Sydenham Hospital, New York City; St. Peter's Hospital, New Brunswick, N. J.; Beth Israel Hospital, Newark, N. J.; With a foreword by Wendell C. Phillips, M. D., Former President, American Medical Association. 203 pages. Illustrated. The Lancet Press, Publishers. Price \$3.00.

This book better qualifies the physician in giving advice to his patients concerning the possibilities and advantages which plastic surgery has to offer. Detailed surgical procedures are not included. There is a distinct effort made through the entire book to elevate plastic surgery above the form of quackery as practised by "Beauty Doctors." The history of the specialty is discussed in an interesting manner. The possible mental reactions to existing deformities are stressed as forming definite indications for operative correction. Deformities of the face form the basis for the greater portion of the book. The nose, ears, lips, chin, and cheeks are discussed separately. The entire field of plastic surgery is covered from an educational point of view. The limitations of the specialty are brought out in a forceful manner. The illustrations are largely limited to "Before and After Plates."

The book has a great educational value to the physician who sees the occasional patient presenting an unfortunate deformity, to the psychiatrist, to the individuals having such deformities, to lawyers, judges and insurance carriers and, in short, to every one.

A more detailed piece of work in this field by the same author should be welcomed by the medical profession.

J. L. B.

Useful Drugs: A List of Drugs Selected to Supply the Demand for a Less Extensive Materia Medica with a Brief Discussion of Their Actions, Uses and Dosage. Edited by Robert A. Hatcher, Ph. M., Sc. D., M. D., and Cary Eggleston, M. D. Prepared under the Direction and Supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Ninth edition. Cloth. Price, 60 cents. Pp. 203. Chicago: American Medical Association, 1934.

This book represents a valuable and increasingly effective phase of the efforts of the Council on Pharmacy and Chemistry on behalf of rational therapeutics. Since its first appearance in 1913 it has become a recognized work in its field. It has been adopted as a textbook by teachers of therapeutics in the best medical schools and by various examining and licensing boards. The various editions and revisions since that time have been undertaken in the effort to keep it abreast with the advance of therapeutics. Drugs that have become obsolete have been deleted, and others the value of which has become established have been added. The statements of actions, uses and dosage of the various drugs are revised after discussion by the whole Council. They represent the latest and best results of therapeutics and pharmacologic revision. The present edition is in line with the constant aim of the Council, which has been to present a selective and informative yet comprehensive compendium of the more useful preparations in the medical armamentarium. There have been some additions

to the list of drugs and a few have been deleted. Individual descriptions show evidence of careful editing. Typographically the text is an improvement on previous editions by reason of more generous spacing, which makes it easier on the eyes. As it stands, the book is an authoritative, intelligent, critical and entirely adequate textbook for the use of teachers and examiners, as well as for reference by the busy practitioner. It is an integral and constructive part of the Council's efforts in the promotion of the rational use of drugs.

J. A. M. A.

Handedness: Right and Left, By Ira S. Wile, M. D. Lothrop, Lee and Shepherd, Publishers. New York City, 1934. Cloth. 439 pages. Price \$2.75.

The thoroughness of some students and the detail into which they go in explaining a subject is obvious to any one who reads this book. Doctor Wile has covered a vast store of literature in many languages and has included in his book everything that has ever been written on the subject of handedness and many things which were only thought of. The manner in which he has presented this vast store of information is by no means dull. From all this store of information, which included even the reverse motion of some heavenly bodies he reaches a sound conclusion which should be of value to all medical men. The dangers of forcing right-handedness on a left-handed person are made clear and this point of view should be made known to all who exercise authority in the training of children. The book should be appreciated by all left-handed individuals who have the intelligence to understand it. A truly literary book, it goes a very long way to reach a very simple conclusion.

C. H. R.

How to Practice Medicine, By Henry W. Kemp, M. D. New York. Paul B. Hoeber, Incorporated, Publishers. New York. 1935. Cloth. 156 pages. Price \$2.50.

If you are still young enough to remember your early days in the practice of medicine, if you can still recall how full your mind was with science and theory and how empty of practical experience, you will enjoy reading this book even though you may have some regrets that you did not have it on your desk during those trying times. In between consultations—which were probably hours apart—you could have devoted your spare time to reading this little book and would have found answers to many of the questions which were puzzling your brain. Though it is said that experience is the best teacher, reading the experience of another is less unpleasant than a course in trial and error. On the other hand if your hair is getting gray or scant and you have to pay an income tax and devote more of your time to stock reports than to medical journals it might amuse you to read what, in the author's opinion, every young doctor should know and you might smile as you recall your mistakes in the past. Kemp tells the doctor how to outfit his office, what type of assistants to employ, and outlines the method of conduct of consultations. He tells how to plan a record system and the simplest method of bookkeeping and gives a few rules about collection of accounts. He gives

some good advice about insurance and investments and he makes some very practical suggestions, such as the method of baptism of still-born Catholic babies, the method of replying to requests to produce abortions or endorse notes and the advantages and disadvantages of joining lodges and clubs.

If you have gotten your start in the practice of medicine, Kemp's book is amusing and entertaining; if you have not it is practical and valuable.

C. K. W.

Textbook of Surgery (Second Edition) For Students and Physicians: By W. Wayne Babcock, A. M., M. D., F. A. C. S., Professor of Surgery and of Clinical Surgery in The Temple University; Surgeon to The Temple University Hospital and to the Philadelphia General Hospital, Chief of the Surgical Service, U. S. General Hospital Number 6, 1917-1919. Second Edition. Rewritten. 1312 pages with 1032 illustrations and 8 plates in color. Philadelphia and London: W. B. Saunders Company, 1935. Cloth, \$10.00 net.

The author of this volume with the cooperation of its publishers has produced the best one-volume text-book of surgery the reviewer has ever seen. Babcock has written no compilation of operative procedures; he has written a surgery from the standpoints of the physiologist, the pathologist, the internist and the surgeon. He does not scorn the use of drugs. He does not recommend surgery to the exclusion of less radical therapy. He includes the latest developments in glandular therapy in sero-therapy and in drug therapy. The field is covered completely. The subject is presented vividly, concisely, logically, and in a fascinating manner. The illustrations are numerous, well chosen and made with scientific accuracy and artistic perfection. The new additions not only include many new subjects—too many to simply enumerate—but in addition an unusually large amount of rewriting has brought most of the chapters up to date. Both as a text-book and as a handy reference, Babcock's is the surgery par excellence.

C. K. W.

Hughes' Practice of Medicine. Revised and edited by Burgess Gordon, M. D., Associate Professor of Medicine, Jefferson Medical College; Director, Department of Diseases of the Chest, Jefferson Hospital; Assistant Physician, Pennsylvania Hospital; Visiting Physician, The White Sanatorium, etc. With sections on Nervous and Mental Diseases by Harold D. Palmer, M. D., Neurologist, Out-Patient Department, Pennsylvania Hospital; Psychiatrist, Institute of the Pennsylvania Hospital; Associate in Psychiatry, Medical School University of Pennsylvania; etc., and on Diseases of the Skin by Vaughn C. Gardner, M. D., Assistant Professor of Dermatology and Syphilology, University of Pennsylvania, etc. Fifteenth Edition. 808 pages with 61 illustrations. P. Blackiston's Sons and Company, Incorporated, 1012 Walnut Street, Philadelphia, Pennsylvania. Cloth. \$5.00.

This excellent manual of medical practice has proved its worth by going through fifteen editions. It presents the average picture of the various diseases rather than the usual composite text-book picture. This is of distinct advantage to the student who is confused by the complicated descriptions of the average text-book but the practitioner will find it a disadvantage because he rarely sees a typical case of any disease. The section on neurology is unusually well written, especially the notes on diagnostic measures in diseases of the nervous system. The dermatological section is well written but suffers because of the absence of illustrations. The new edition includes quite

a bit of new material not found in the previous one. In bringing some of the chapters up to date, space has been conserved by curtailing the details of treatment. The absence of adequate notes on treatment is the chief weakness in a book, otherwise, of considerable practical value.

C. K. W.

Woman's Auxiliary

Minerva S. Roe
(Mrs. Lee Wright Roe)
State Publicity Chairman
Mobile, Alabama

Year Books were distributed to the Jefferson County Medical Auxiliary at its meeting March 12th. Mrs. Estes Hargis, Chairman of the Year Book, has done a splendid piece of work in compiling this volume. It contains a brief history of the Auxiliary by Mrs. Kyle Kinhead and Mrs. Seale Harris, the latter having organized the Auxiliary in 1925. The book also contains a schedule of meetings for the current club year with list of hostesses. At an Executive Board meeting held February 12th it was voted to take no action on legislation matters without a written recommendation from the County Medical Society. The Legislative Committee consists of Mesdames Walter Scott, M. Y. Dabney, and R. M. Pool. Its object is to keep the Auxiliary informed on legislative measures interesting to the medical profession.

Mrs. W. C. Parsons is Publicity Chairman for the Jefferson County Auxiliary. The February meeting was held in the home of Mrs. William Armour, and had as guest speaker, Dr. James McLester. He spoke on "Medical Economics." It was decided in the business session to assist the Tuberculosis Dispensary.

Mrs. Frank C. Smith reports that its Medical Auxiliary appropriated \$10 to a scholarship fund. They gave a linen shower tea for the county nurses' linen chest, and decided to make this an annual event. They also had an open health meeting on March 13th inviting officers of all Federated Clubs, and the Parent-Teacher Associations. Dr. Denison of Birmingham was the speaker. The Auxiliary furnished milk for pupils in one of the schools, and will place Hygeia in the high school library.

* * *

The Woman's Auxiliary of Madison County had a shower of tray cloths in Feb-

ruary for their hospital. At the same meeting there was a program on "Varieties of Hospital Service."

* * *

Mrs. M. G. Shipp is Publicity Chairman at Anniston, and reports an active auxiliary, and an interested membership. In Calhoun County, Mrs. Thomas F. Huey is President.

* * *

The Mobile County Auxiliary has been busy for the past month planning the entertainment of the State officers and delegates to the annual convention. The story of Jane Todd Crawford was presented to the Woman's Auxiliary for the benefit of new members.

TRUTH ABOUT MEDICINES

ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following apparatus have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

Biolite Infrared Generator, Senior Model, Biolite Infrared Generator, Junior Model, and Biolite Infrared Generator, Home Model.—The Senior Model includes three generating units, 900 watt capacity; the Junior Model includes the Senior Biolite Infrared Generating Unit, 600 watt capacity; the Home Model includes the Senior Biolite Infrared Generating Unit, 300 watt capacity. In the opinion of the Council, these units will render satisfactory service in hospital, clinic or office, or wherever heat therapy is indicated. The McIntosh Electrical Corporation, Chicago. (Jour. A. M. A., January 5, 1935, p. 48)

Sanborn Motor-Grafic Metabolism Tester.—In principle, the Sanborn Motor-Grafic Metabolism Tester is a closed circuit, wet spirometer metabolism apparatus, designed for use in office practice and in the hospital. A number of determinations of metabolism by means of this apparatus were made on different individuals under various conditions and have given values that were essentially correct for normal, supernormal and infranormal metabolism.

The therapeutic claim for the Sanborn Motor-Grafic "that it enables doctors to obtain the guidance of basal metabolism test reports by a method that is simple for the operator and reliable for accuracy and dependability" is warranted. Sanborn Company, Cambridge, Mass. (Jour. A. M. A., January 12, 1935, p. 120)

Hanovia Ultraviolet Meters.—These meters are designed and calibrated for the measurement of the ultraviolet radiation energy of wavelength 3,130 angstroms and shorter from the quartz mercury arc lamp and from the 60 ampere C carbon arc. It is available in two forms; namely, an indicating instrument, intended for intermittent use, and a recording instrument designed for continuous operation. The meter may be used for the measurement of other light sources only when specifically calibrated for them. The meter cannot be used for the measurement of the ultraviolet component in sunlight satisfactorily. Hanovia Chemical and Manufacturing Company, Newark, N. J.

PROPAGANDA FOR REFORM

Dihydroxy-Anthranol (Anthralin).—The Council on Pharmacy and Chemistry authorized publication of a preliminary report on dihydroxy-anthranol, submitted by the Abbott Laboratories, which has been employed as a substitute for chrysarobin in the treatment of various skin disorders. The Council voted to accept the name Anthralin as a nonproprietary designation for dihydroxy-anthranol. Anthralin is practically insoluble in water but readily soluble in the more complex organic and lipoid solvents—a feature of distinct advantage in the preparation of ointments, lotions and pastes. The use and effectiveness of Anthralin in disease of the scalp is particularly significant, since chrysarobin, by reason of its conjunctival irritation, cannot be so employed. Although the Council appreciates the vast foreign work that has accumulated regarding dihydroxy-anthranol, it has deferred consideration of Anthralin until such time as more adequate investigations of the nature, properties and pharmacologic and toxic actions of the drug shall have been reported. (Jour. A. M. A., January 5, 1935, p. 48.)

Miscellany

HOSPITAL SERVICE

Thirty-one million persons in the United States live in areas which are seriously deficient in hospital and health services according to a nation-wide study made by Alden B. Mills, managing editor of "The Modern Hospital" and formerly executive secretary of the Committee on the Costs of Medical Care. The results of the study will be published in the March issue of *The Modern Hospital*.

The Mills study continues one made last year by Michael M. Davis of the Rosenwald Fund, which revealed that about 1,300 of the 3,073 counties in the United States have no general hospitals at all.

The new survey points out that some counties do not need general hospitals since they are or can be served by hospitals in adjacent counties if the distance is not greater than fifty miles. Consequently in this study the United States is divided into areas with approximately fifty-mile radiuses.

After careful study of all factors involved it was decided that rural populations require a minimum of two hospital beds per thousand population, although the study does not recommend or consider practical the building of general hospitals of less than twenty-five beds. For areas not requiring at least twenty-five-bed general hospitals, it is suggested that "cottage hospitals" or central medical service offices be established. This study also covers the distribution of physicians in the United States.

The study shows that there are 31,000,000 people and 29,000 physicians in areas that contain less than two hospital beds per thousand population and are more than fifty miles from a hospital center; there are 1,117,915 persons and 896 physicians in areas that have less than one-fourth of this ratio (0.5 hospital beds per thousand population); and there are 147 such 100-mile areas in the United States which have fewer than two hospital beds per thousand population; and that there is an actual need of 22,000 additional hospital beds in these 147 areas if minimum standards are to be met.

Individual states which have largest needs for additional beds are Texas, Ala-

bama, Tennessee, Georgia, Mississippi, Kentucky, Missouri, Louisiana, Arkansas, Oklahoma, and North Carolina. Also there is revealed a serious deficiency of hospital facilities in some areas in western Kansas, parts of Virginia, South Carolina, Illinois, Ohio, Indiana, and Florida.

No large area deficient in hospital service exists in the New England States according to this survey.

Dr. W. S. Rankin of the Duke Endowment, in an article in the same issue of the magazine, says that the community without hospital facilities has ceased to attract the young, well-prepared physician, or that, if he is forced to locate in such a rural area, he stays no longer than necessary to enable him to move to a community providing hospital facilities and congenial professional surroundings. Herein lies the principal cause of the relative scarcity of physicians in rural communities, in Doctor Rankin's judgment.

Both writers suggest that two or more counties could frequently join, officially or unofficially, in furnishing hospital facilities where needed.

It is pointed out by Dr. F. C. Middleton, Saskatchewan health officer, writing in the same issue, that this idea has been used successfully in the prairie provinces of Canada. There counties frequently join in building and equipping "union hospitals", much as we in the United States do in building union high schools. The counties in Canada either assist in meeting the current operating costs of the hospitals or occasionally meet them in full and make no charge to patients. The province also pays fifty cents per patient day to hospitals of acceptable standards.

ADVERTISERS' NOTES

ADVANCES IN OVARIAN THERAPY

A gynecologist, whose name is known from coast to coast, recently commented in the *Journal of the American Medical Association* (Feb. 23rd) about the cost of ovarian therapy: "It is greatly regretted," he wrote, "that the American products have not been available at prices that justify their preference or at least their being on a parity with the imported material."

Physicians, who have read this statement, will be interested in the announcement

from the Squibb Laboratories that the potency of Amniotin—a physiologically tested preparation of the ovarian follicular hormone, has been increased three-fold and the cost per unit has been reduced to about one-tenth of its former price. For hypodermic administration, Amniotin in Oil is now distributed in 1 cc. size ampules, containing 8,000 to 2,000 International Units per cc.

Amniotin Capsules and Pessaries (vaginal suppositories) now contain 1,000 and 2,000 International Units, respectively. The price of these packages is now so low as to compare favorably with the cost of insulin.

These new high-potency preparations should make ovarian hormone (estrin) therapy eminently more satisfactory. Amniotin is indicated in the treatment of menopausal symptoms; involutional melancholia; gonorrheal vaginitis in children; senile vaginitis; breast hyperplasia (lobular type associated with bleeding); selected cases of frigidity, and migraine of pituitary origin.

MEAD'S VIOSTEROL

No antiricketic substance will straighten bones that have become misshapen as the result of rickets. But Mead's Viosterol (plain or in Halibut Liver Oil) can be de-

pended upon to prevent ricketic deformities. This is not true of all antiricketic agents, many of which are so limited by tolerance or bulk that they cannot be given in quantities sufficient to arrest the ricketic process promptly, with the result that the bones are not adequately calcified to bear weight or muscle-pull and hence become deformed

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Drug or Detail Salesman calling regularly on dispensing physicians, free to accept non-competing line. Liberal commission and full protection. Give present line, territory covered, and number of trips per year. Complete cooperation and direct mail assistance. Gaston Moreau, 509 Fifth Avenue, New York, N. Y.

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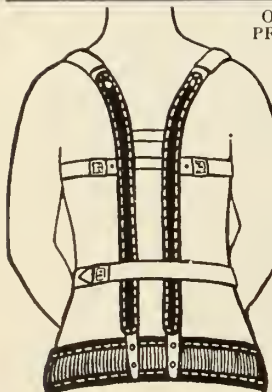
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THE LARSEN COMPANY, Green Bay, Wis.

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TAYLOR SPINAL BRACE



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A well padded surgical steel spinal support furnished with apron and perineal straps.

Made to order in 24 hours

Take measurements around iliac crest, umbilicus, distance from sacro lumbar articulation to 7th cervical vertebra prominence.

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THIS HIGH GRADE

OTHERS ASK UP TO \$10.00

SACRO-ILIAC BELT

OUR PRICE **\$3.50**

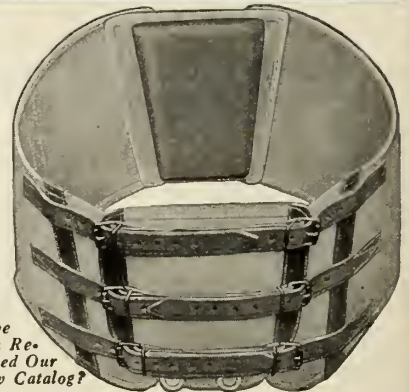
Beautifully made of six inch orthopedic webbing, well reinforced, supplied with perineal straps.

Take measurements around the hips three inches below the iliac crest.

WE ALSO MAKE—

Abdominal Belts, \$3.50— for hernia, obesity, maternity, ptosis, post-operative.

Hood Truss ----- \$ 4.00
Thomas Leg Splints 4.00
Ambulatory Splint... 15.00
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DIAGNOSIS, TREATMENT AND PREVENTION OF TUBERCULOSIS*

By

J. ARTHUR MYERS, M. D.,
Minneapolis, Minn.

The outlook for the control of tuberculosis in this country has never been so bright as at present. We have learned all that we need to know concerning tuberculosis in order to bring it under control. This statement should not discourage further research in various phases of tuberculosis, for, through such activities, methods might be discovered by which control of the disease could be definitely hastened. However, if we never have added to our present knowledge a single additional fact but will use the information we now possess in the proper manner, we can very soon reduce tuberculosis from its position as a major disease to one of minor importance.

The human body has a powerful defense mechanism against the first attack of tubercle bacilli. This mechanism consists of the white blood cells and the fixed tissue cells which in the majority of cases suffice to bring the tubercle bacilli under control. This defense mechanism apparently is equally effective in all races of people and at all ages of life. Figures 1 and 2. Therefore, the lesions caused by the first infection with tubercle bacilli are nearly always benign, rarely cause significant symptoms and probably almost never cause death. However, they create in the body two very

unfavorable situations: first, the growth of tubercle bacilli in the body, even though they are brought under control by the defense mechanism, results in allergy of the tissues to tuberculo-protein. It is this which the positive tuberculin reaction reveals. Second, although the tubercle bacilli of first infection are brought under control and are well encapsulated, they remain alive over long periods of time and often throughout the span of life of the contaminated individual. They may be carried out of the first infection foci of disease by white blood cells and deposited in other parts of the body, where they multiply and set up disease of a reinfection or destructive type. Again, before the capsule is well formed, the bacilli may spread to adjacent tissues which have become allergic and there set up the reinfection type of disease. Even years after the capsule has been well formed, there is always the possibility of the caseous material within burrowing through. There is also the possibility of the capsule becoming absorbed; again, it may be ruptured through trauma, thus setting free the living and virulent tubercle bacilli. When tubercle bacilli are carried out of the primary foci by white blood cells or are set free and reach adjacent or remote allergic tissues in any manner, we speak of the reinfection as endogenous. When the tissues of the body have become allergic to tuberculo-protein and tubercle bacilli are subsequently taken into the body through exposure to patients who have open tuberculosis, we speak of the reinfection as exogenous. Whether endogenous or exogenous reinfection is more common has not been definitely determined but the reaction produced by tubercle bacilli of reinfection is a much more severe and intense one than occurs when the tissues are first

*Presented to the Association in annual session, Birmingham, April 17, 1934.

*From the Departments of Internal Medicine and Preventive Medicine, University of Minnesota and the Lymanhurst School for Tuberculous Children, Minneapolis.

*Prepared with the aid of a grant from the Medical Research Fund, University of Minnesota.

attacked by tubercle bacilli. It is the reinfection type of tuberculosis which causes nearly all of the illness and death from this disease. It cannot develop except in the presence of a first infection type of tuberculosis, which in reality sets the stage. Therefore, in order to control tuberculosis, we must go back to its beginning and prevent the first attack of tubercle bacilli upon the body.



Fig. 1. L. L. Made from an x-ray film taken on September 11, 1924, of the chest of a girl of 14 years. Mother died of tuberculosis. Note chain of calcium deposits in left lung with few deposits in the right upper lobe. (Courtesy Dr. Jesse Douglass, Webb City, Mo.)

The chronic, reinfection type of pulmonary tuberculosis often exists over a period of two or more years without producing any symptoms or abnormal physical signs. During this time, while in many cases the lesions do not break down and bacilli are not spread from them to other persons, the disease can be detected through the tuberculin test, the x-ray film, and other phases of clinical examination. The positive tuberculin test informs us only that the body has been contaminated with tubercle bacilli and that foci of first infection exist. An x-ray film of the chest should be made of every positive reactor, not with the idea of locating the first infection type of disease, since

it is benign and does not need treatment, but to locate any reinfection type of lesion that has become macroscopic in size. No one from the shadow of an x-ray film can make a definite diagnosis of tuberculosis. These shadows only give us leads; therefore, every person who is found to have abnormal shadows on the x-ray film should be most carefully examined and observed clinically. Some will be found already to have

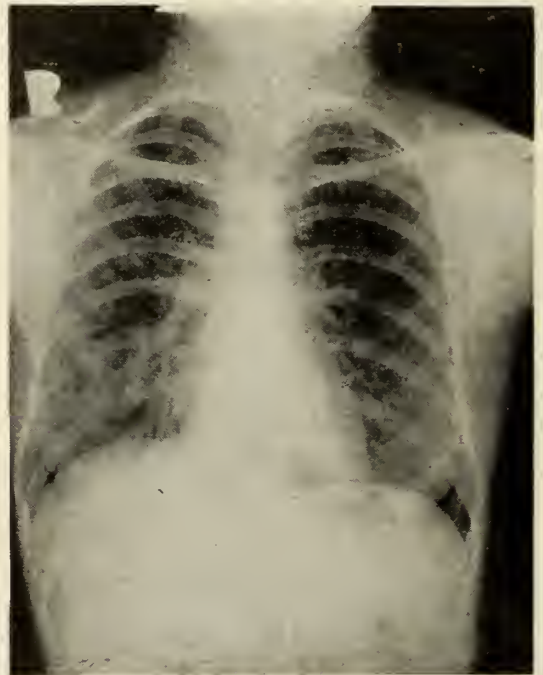


Fig. 2 (a). C. K. Made from an x-ray film taken on December 10, 1931, of the chest of a woman of 23 years. Husband seriously ill with pulmonary tuberculosis. Note shadows in base of right lung.

tubercle bacilli in the sputum. Their disease is too far advanced to be treated successfully. They should at once be isolated in the home, a general hospital, or a sanatorium, where palliative measures are administered and the dissemination of their tubercle bacilli to others is immediately stopped. Others will be found who have tubercle bacilli in the sputum but their disease is not so extensive but that it may be treated successfully and within a period of a few weeks, the sputum disappears or is rendered negative to tubercle bacilli. Such persons may not need hospitalization, particularly if collapse therapy is instituted. Others will be found who have definite le-

sions of the reinfection type which are progressive but have not yet broken down. If any sputum is present, it does not contain tubercle bacilli. Through collapse therapy, particularly artificial pneumothorax, many such cases can have their disease directed toward healing without removal from the activities of life. Still others will be found whose shadows are small or non-progressive. Such patients need only close obser-

tuberculosis will be looked upon as a minor disease.

Tuberculosis has long been recognized as a family disease, not because it is inherited but because it spreads among the members of families by contact. When an open case of tuberculosis is detected, every member of the immediate family and other close relatives and associates who have been in contact with the patient should receive the tuberculin test, and each positive reactor should have the chest studied by x-ray film, as well as physical and other phases of the examination. This often leads to the finding of cases of pulmonary tuberculosis before any symptoms are present and when treatment can be very successfully administered. In case no member of the family or close associate of the patient is found to have clinical tuberculosis at the first examination, periodic examinations should be made of all of the contacts over long periods of time. Pulmonary tuberculosis of the reinfection chronic type is a slowly developing disease and the interval between exposure and illness may be years.

Rathbun made careful examinations of twenty-four families in which a school child was found to have the childhood type of tuberculosis and found that in 54 per cent a parent was at that time ill from tuberculosis or had died of the disease; while in another 17 per cent parents had suspicious lesions. The more intimate the contact of other members of the family with the tuberculous member, the more frequent the clinical cases. Barclay, for example, showed that approximately 27 per cent of the persons who sleep in the same beds as tuberculous patients later develop clinical tuberculosis. Recent studies on *conjugal* tuberculosis show that where sufficiently large numbers of consorts of tuberculous patients have been carefully examined with modern diagnostic aids, and have been observed over sufficiently long periods of time, clinical disease has been found to develop in an alarmingly high percentage, statements to the contrary notwithstanding. Recent reports have shown that from 10 to 50 per cent of such consorts develop demonstrable lesions. Our chief difficulty in the past has been that we have paid no attention to tuberculosis in the human family until it resulted in disability. By this time the ma-

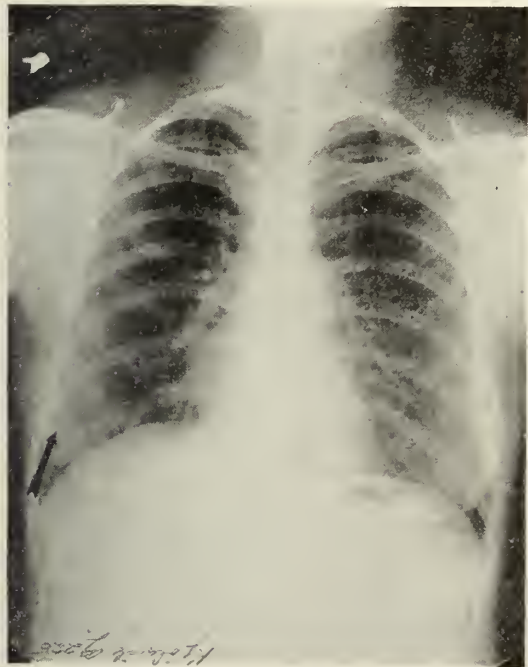


Fig. 2 (b). C. K. Made from x-ray film taken on January 8, 1934, of same chest as seen in Fig. 2 (a). Shows marked resolution of shadow in the right base with Ghon tubercle formation.

vation by their physicians, so that if the lesions ever become progressive the fact will be discovered while there is still time to administer successful treatment. Some persons will be found with x-ray shadows which are due to non-tuberculous conditions, such as malignancies, foreign body abscesses, bronchiectasis, fungus disease, etc. Even unsuspected cardiac lesions may be diagnosed through the suspicions raised by changes from the normal in the cardiac outline on the x-ray film.

There are certain facts and procedures which have become very practical and which if used properly by the medical profession will greatly hasten the time when

jority of the cases were moderately or far advanced and were disseminating bacilli. Thus, the disease was handed down from generation to generation.

In order to show in a small way the great destruction which tuberculosis is allowed to cause by our old procedure of control, seventeen case histories were picked at random from a health department office, which represented seventeen *families* and 102 persons. When investigation was made, 42 of the 102 persons had the reinfection type of tuberculosis so far developed as to make them ill. From the time their illness began until June 15, 1933, the total illness amounted to 1,836 months or 153 years. Of the 42 with the reinfection type of disease, 29 were sent to sanatoriums and until June 15, 1933, they had spent 674 months or more than 56 years, mostly in tax-supported institutions. The very conservative cost in our tax-supported institutions is \$84.00 per month per patient. Thus, taxation has already paid more than \$56,000 for 29 members of seventeen families who were hospitalized. This leaves 1,162 months, or approximately 97 years of illness spent in homes. Twelve of the 42 cases of the reinfection type of tuberculosis have already died. In addition to these 42 cases, there were 31 cases of the first infection type. Two of the 102 members of the seventeen families refused examination. Thus, of 100 examined, 73 were contaminated with tubercle bacilli. In addition, there was one case of tuberculosis of the bones and joints. Inasmuch as the 31, who are apparently well but have the first infection type of disease, are potential reinfection types, it is obvious that since most of them are children some will later fall ill of the reinfection type. While the number of cases, the total duration of illness, total hospitalization, and the number of deaths are great, they are insignificant when compared with the dissemination of tubercle bacilli by the 42 reinfection types to their associates. The 31 in their own families doubtless represent a very small percentage of the total number they have infected. Thus, they have started all over again the vicious cycle of tuberculosis and the next generation will reap much of the harvest.

In 1933, an attempt was made to arrive at reasonably accurate figures pertaining

to the cost of tuberculosis in one county which has invested \$2,671,981.00 in the buildings and equipment of its sanatorium. Soon after it reached its present capacity, the annual maintenance cost was \$685,-107.58. In addition to its 702 beds, this institution was renting approximately twenty beds in a private hospital at an annual cost of approximately \$21,600. In addition to the patients in the county sanatorium, a few were sent to the state sanatorium with an annual cost of \$13,438.08. The local health department and the department of hygiene was expending \$83,268.00 on tuberculosis. The seal sale organization had a gross income of over \$45,000. Thus, over a period of ten years, these figures would total to the appalling sum of \$8,034,136.60, to say nothing of the interest on \$2,671,-981.00 invested in buildings and their upkeep.

Meyerding has called attention to the fact that tuberculosis cost the United States government more than \$46,000,000 in 1932 for service-connected compensation alone. This is only part of the bill paid annually for tuberculosis. The cost for hospitalization for tuberculous ex-service men multiplies this bill by many thousands of dollars since there were 61,330 veterans hospitalized from 1924 to 1924 for tuberculosis. Had our present methods of finding tuberculosis been in use at the time we entered the World War, large numbers of tuberculous lesions would have been detected which would have rendered men ineligible for service. This not only would have prevented long periods of invalidism for many but would have prevented large numbers of untimely deaths.

Widespread interest in tuberculosis is being developed among physicians throughout the country. This is largely due to the fact that the methods of diagnosis have become quite accurate and yet are very simple. In fact, the diagnostic procedures can be carried out in any well equipped physician's office. Moreover, successful methods of treatment, particularly collapse therapy, have been developed so that the physician can see a favorable outcome from the treatment of the tuberculous patient provided the disease has not been allowed to become too extensive. Most important of all is the fact that the physician now

sees how he can play a significant role in the prevention of the spread of tuberculosis in his community and among the members of the families of his clientele. With these encouraging facts, there is every reason to believe that the interest among physicians throughout the country will continue to increase.

The activities on the part of state medical associations are most encouraging. For example, a number of these organizations have appointed special tuberculosis committees whose members are actively engaged in bringing the newer knowledge concerning this disease to the members of their association. Moreover, they are investigating the work now in progress by specialized groups in their profession as well as lay organizations with the thought of bringing about general cooperation of all groups concerned under the direction of the medical association.

The physicians in general practice always have seen more cases of tuberculosis than those specializing in the diagnosis and treatment of the disease. The majority of tuberculous patients first see their family physicians, but unfortunately, he has been led to believe that he has little or no place in the tuberculosis control program and, therefore, should refer all such cases to physicians who are specializing in the disease or to institutions. It is the family physician who must come to know that he has the most important role to play in the tuberculosis program and that his diagnostic ability is or can quickly be made adequate. Those specializing in other phases of clinical medicine, such as obstetrics and nervous and mental diseases, also have a large role to play in tuberculosis control. Our institutional men, particularly medical directors of sanatoriums, have always been an important factor in the field of tuberculosis, but through the cooperation of all physicians and lay organizations they will be able to play a greater part in the future.

In the state of Minnesota, the executive secretary of the medical association serves in the same capacity for the public health association. Committees of both associations confer with him and often meet jointly in order to determine the best policies to adopt. This has made it possible for medical groups to recommend the use of Christ-

mas seal-sale funds in ways and places where they would do most good. For example, through such cooperation, the State Public Health Association, a number of years ago, announced that tuberculin in the proper dilution and with directions for its administration, would be sent free of charge to any physician in the state who requested it for diagnostic purposes.

Interest was stimulated in this manner in the county with the largest population in the state. The local tuberculosis society, the county medical society and the health department, through the joint committee, arranged to provide each physician of the county with a tuberculin syringe, and to deliver to his office, without expense, a fresh supply of properly diluted tuberculin every two weeks. He was then advised to make x-ray films of the chests of all of his patients who reacted positively to the test. It is truly remarkable how many physicians in this county, regardless of the nature of their practice, that is, whether it be general or specialized, have made the tuberculin test a routine for every patient. This has resulted in the finding of many cases of pulmonary tuberculosis, most of whom did not have symptoms which would have brought them to physicians for such examinations. The following is only one of numerous examples which might be cited.

One physician limiting his work to nervous and mental diseases had a patient referred to him for a condition in his field. He administered the tuberculin test and when it reacted positively, further phases of the examination were made which resulted in the finding of definite tuberculosis with cavity formation in one lung. Obviously, the placing of such a patient in an institution for nervous and mental cases, or treating him in his home would have been a danger to his associates if the tuberculous disease had not been detected. Now, it is possible to treat him for the nervous disturbance, and have his tuberculosis brought under control in such a way that he is not a menace to the nurses and others who care for him and associate with him.

Another project which has been made possible is the provision for short courses in tuberculosis and closely allied diseases for physicians in their own localities. That

is, the courses have been taken to them. Here the sanatorium superintendents have been most helpful as they have arranged for many of these courses to be conducted in their institutions. Because better teaching can be done in smaller groups, the enrollment has usually been limited to approximately twenty-five. On more than one occasion, the number of applicants was nearly double the enrollment limit so that it was necessary to repeat the course for the additional group. In some places these courses have been repeated from year to year. This results in close cooperation between the sanatorium medical director and the practicing physicians of his district so that the institution is used by them for patients who really need sanatorium care. As soon as the patients have recovered sufficiently, they are referred back to the offices of the private practitioners who have developed skill in the treatment of tuberculosis as well as its diagnosis.

A more recent and extremely practical enterprise consists of sending a first-class x-ray technician to the offices of physicians throughout the state who have x-ray equipment but who, in the past, have not been able to make satisfactory chest films. This, of course, is done on the request of the physician. Many of these physicians have been amazed to find that by slight adjustment of their x-ray equipment, the proper timing of exposures, etc., they have been able to produce x-ray films of the chest fully as satisfactory as those produced in large x-ray laboratories. This has aided them in detecting pulmonary lesions which, in times past, would not have been visualized because of the poor quality of their films.

Demonstration surveys have been arranged through the local medical societies and tuberculosis societies, that is, both groups vote unanimously for such a demonstration before it is undertaken. A clinic or survey which is held in a community but which leaves nothing that the local practitioner can use in the future is of little or no value and is sometimes a detriment to the cause. The present method of conducting such surveys consists, first, of the administration of the tuberculin test in which the local physicians have an active part. Second, the making of x-ray films of the

chest of the positive reactors, in the offices of the local physicians and hospitals. Before the x-ray work is done, an expert x-ray technician investigates all equipment, makes sure that it is in good order and then demonstrates to the physicians how to produce first-class chest films. After the x-ray work has been completed, a meeting of the local medical society is held, when each physician brings in the case histories, tuberculin findings and the x-ray films which show any evidence of disease. Each case is discussed with the physicians by one who specializes in tuberculosis.

Thus, the physician is equipped with the necessary facilities and the knowledge for diagnosing the disease and managing the cases found, so that when the survey is over the work will be perpetuated by the local physicians. The main thought, therefore, behind the whole tuberculosis program should be to make the office of every physician a diagnostic center for tuberculosis as well as one where first-class management of cases can be carried out or recommended.

As soon as the reinfection type of pulmonary tuberculosis is detected, whether or not the sputum contains tubercle bacilli, the case should be reported to the health officer. In some places, the death certificate is the first report the health officer receives in as high as 30 per cent of the cases of tuberculosis. Although negligence is probably the chief reason for failure to report tuberculosis, nevertheless such failure is a rather serious reflection on the medical profession because tuberculosis is communicable. Therefore, the health officer should be informed of every case of tuberculosis as soon as possible after the disease is detected. We must constantly keep in mind that he is the official in each community as far as communicable diseases are concerned.

With the splendid cooperation between the medical association and the tuberculosis or public health association in Minnesota over the past ten years, the need for sanatorium beds has been definitely reduced. Where there were long waiting lists in previous years, there are now vacancies. Indeed, in the tax-supported institutions of the state, there are more than one hundred beds for tuberculous patients vacant throughout the year. If the work contin-

ues, it would seem safe to predict that the number of vacancies will increase until ultimately a relatively small number of beds for tuberculosis will be needed. Witness the diphtheria, smallpox, and typhoid situation of today with reference to bed requirements, and contrast it with that of only a few decades ago. In states where there has been little or no sanatorium building a reasonable number of such institutions may be provided. However, we must not overlook the fact that general hospitals are capable of giving excellent care to tuberculous patients and that there are now 150,000 vacancies throughout the country in these hospitals.

While tuberculosis work is being established in physicians' offices everywhere, there are certain very definite problems which must be solved; that is, there are certain groups of people among whom tuberculosis is prevalent as well as groups whose disease may be more dangerous than among others by reason of their associations, such as teachers, school children, elderly people, inmates of institutions, patients with diabetes, pregnant women, and students of schools of nursing and medicine.

The problem of tuberculosis among teachers in both private and public schools is becoming quite generally recognized, so much so, in fact, that many boards of education have issued orders to the effect that all teachers and employees of school systems be adequately examined for tuberculosis. Many more boards are contemplating the issuance of such orders. These orders are based upon actual observations of tuberculous teachers transmitting tubercle bacilli to the children whom they teach, both in this country and abroad. Figure 3. It is probable that during the next few years, nearly every physician in this country will be called upon to take part in the actual examination of teachers for tuberculosis, or will be consulted concerning the advisability of such a procedure or for information regarding examinations. Therefore, every member of the medical profession, regardless of the nature of his practice, should add to his armamentarium knowledge of the very latest methods of examination, the most modern interpretations of the findings, as well as the new procedures used in

the treatment and prevention of this disease.

The procedure recently carried out in the city of Minneapolis consisted of first securing not only the approval but also the support of the local medical society. Then the school board passed an order to the effect that all teachers and other employees of the school system should submit to the tuberculin test and the positive reactors

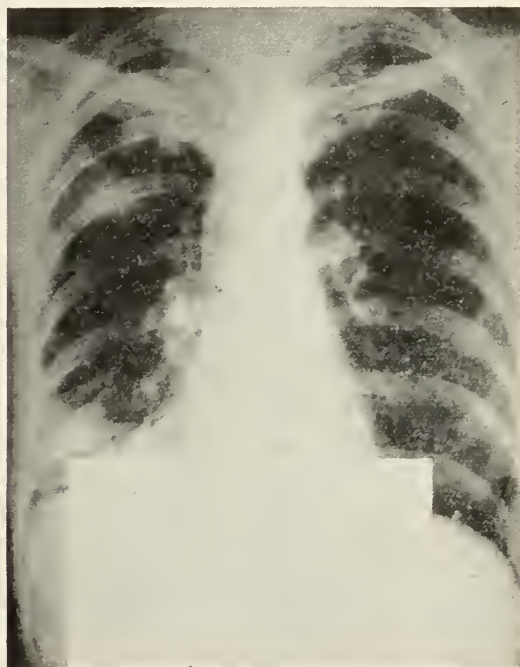


Fig. 3. M. D. Made from x-ray film taken on February 12, 1930, of chest of teacher of 25 years. Sputum positive for tubercle bacilli. This girl taught until the examination was made and for several months thereafter.

have x-ray film examinations made of their chests. For those objecting to the tuberculin test, x-ray films must be made of the chest. Of the 3,602 employees, 2,201 submitted to the test, of whom 49.88 per cent reacted positively. Of the 2,466 who had x-ray films made of the chest, 78 showed evidence of parenchymal lesions, who were then referred to their clinicians for final diagnosis and determination as to whether they were safe associates for children and other teachers until their disease was treated. Several cases of advanced pulmonary tuberculosis, with positive sputum, were detected in this group. Although numerous protests were filed by the em-

ployees of the board of education against this procedure in the beginning, very fine cooperation existed before the work was completed, as it became obvious that the whole object of the survey was for the good of the employees as well as the children whom they taught. If tuberculosis were not a communicable disease, the effort to find this number of cases would not be justified, but inasmuch as one tuberculous employee is capable of spreading tubercle bacilli to the other teachers and to large numbers of girls and boys, the finding of a single case would more than justify all the expense and effort. Not all of the value lies in the finding of cases of tuberculosis. The educational aspects of such demonstrations are very much worth while. When the majority of the educators have been convinced of the seriousness of the problem, the tuberculosis program will move forward with much greater rapidity.

The problem of clinical tuberculosis among school children under the age of ten or twelve years is not as great as it was formerly thought. In the earlier ages of school life, tuberculosis of the reinfection type does not frequently occur. However, it is during this age period that advantage can be taken of group psychology and the willingness of parents to have every possible effort made to keep their children in good health. This makes it possible to test children in large numbers, in order to screen out those who have been exposed and have tubercles in their bodies. Inasmuch as these children are potential cases of the reinfection type of disease during the teen age period and subsequently, and it has been shown that they are many times more likely to develop clinical disease than children who react negatively to the tuberculin test, it is obvious that they should be kept under very close medical supervision and that x-ray films, in addition to other phases of the examination, should be made periodically after the age of ten years. It is not an unusual experience to see high school girls and boys fall ill from tuberculosis but the disease usually is not detected until it is well advanced and they have disseminated tubercle bacilli to their teachers and school mates. Figure 4. With the present plan of procedure, all such cases can be prevented. Moreover, the number

of children reacting positively to the tuberculin test has definitely decreased and is still decreasing. We have reached the time when so few react positively to the test in many parts of the country that it is now within the realm of physical possibility to give them adequate observation and care through the high school age. Colleges and universities are rapidly becoming equipped for adequate examinations of their stu-

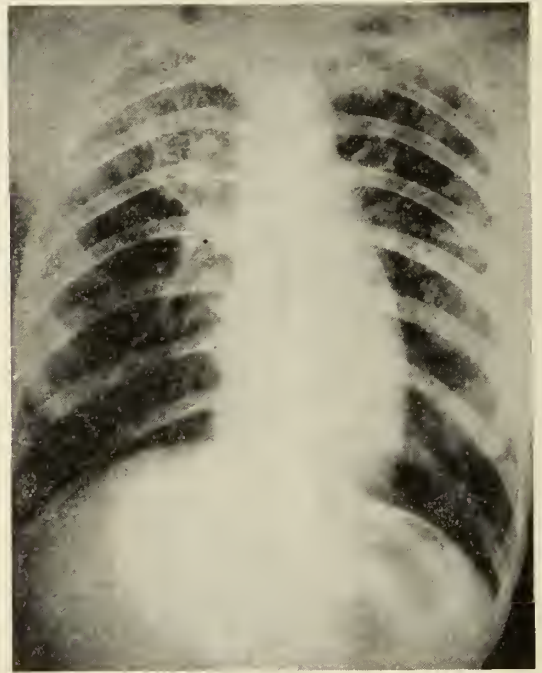


Fig. 4. P. K. Made from x-ray film taken on February 23, 1933, of chest of school girl of 14 years. Shows extensive pulmonary tuberculosis involving both lungs. History of exposure. Tuberculin test positive. This was the first examination of this girl's chest.

dents for tuberculosis. Therefore, it should not be long until the child can pass from kindergarten through the university in an environment that is safe from tuberculosis.

There still exists the erroneous general belief that tuberculosis rarely is found in the bodies of persons beyond the age of fifty years. This is a particularly dangerous period, not from the standpoint of the individual because the disease often causes little or no illness, but from the standpoint of the grandchildren, children, and other associates of elderly people, since the tubercle bacilli from such cases are abundant and just as virulent as those from persons suffering from acute forms of tuberculosis.

Harrington made sputum examinations of elderly people, none of whom were suspected of having tuberculosis and found tubercle bacilli abundantly present in 6 per cent. The disease is prevalent among elderly persons, therefore, every physician should make a careful search for it when examining those in this age period even though symptoms are slight or absent. Figure 5.

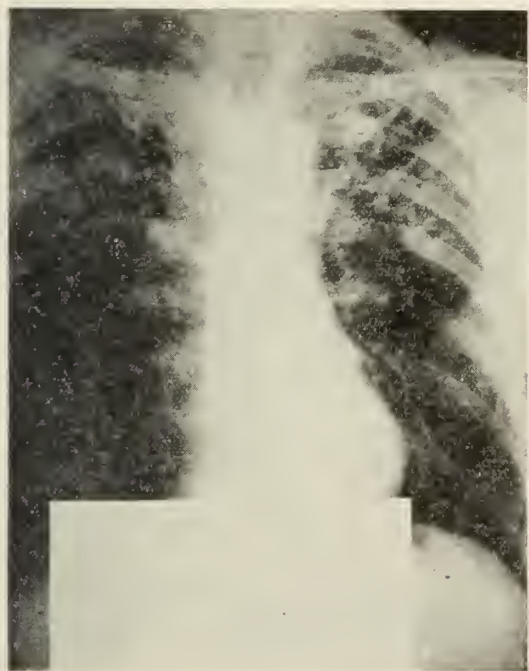


Fig. 5. E. H. Made from x-ray film taken on March 3, 1933, of chest of man of 53 years. Requested examination because of slight hoarseness of voice. Complained of no other symptoms. Shows far advanced bilateral pulmonary tuberculosis. Tubercle bacilli present in the sputum.

For a long time, we have been congregating people with marked mental deficiencies and insanity in institutions, paying little or no attention to the communicable diseases they might have on admission or which they might develop during residence, forgetting the dangers of such diseases to those who care for the inmates of these institutions. Only recently has special attention been called to the fact that such institutions are seriously infested with tuberculosis. Bogen et al. made a study of the tuberculosis situation in a state hospital with more than 2,000 patients. They found that less than 20

per cent of patients on the admitting wards showed a strongly positive tuberculin reaction, as compared to more than twice that number on the remaining wards and an even higher proportion on the wards in which patients with active tuberculosis were clinically recognized. In this institution, they found a tuberculosis mortality rate of more than ten times that of the state in which it is located. The high morbidity and mortality which they found was ascribed to exposure to other cases of tuberculosis, rather than to any immunological mechanism. Wicks keeps under close observation for tuberculosis all of the patients and staff of the institutions for the insane in Ontario. He has found that 4.5 per cent of such patients have pulmonary tuberculosis either in an active or arrested stage. Burns has administered tuberculin tests and made x-ray films of the positive reactors among the inmates and the employees of the Minnesota state institutions and has found a good many cases of unsuspected tuberculosis.

It has long been recognized that tuberculosis frequently co-exists with diabetes. Several years ago Krause said: "In our ignorance it is significant that diabetes, a so-called disease of metabolism, is associated with an unusual tendency to active tuberculosis." In an extensive study, Root has recently called attention not only to the frequency but to the seriousness of this co-existence. He has pointed out that at the autopsy table tuberculosis has been found in the bodies of diabetics two to three times as frequently as expected. In children who develop diabetes before the age of fifteen years, adult type of pulmonary tuberculosis was thirteen times as frequent as among Massachusetts school children, while during the period of adolescence tuberculosis occurred sixteen times more frequently among those with diabetes than among Massachusetts high school students. Among adults with diabetes, he found 2.8 per cent had co-existing active pulmonary tuberculosis. Therefore, it behooves every physician to examine all of his diabetic patients periodically for pulmonary tuberculosis, inasmuch as the successful treatment of this disease depends upon early recognition without which the patient is likely to become a disseminator of tubercle bacilli and

have his expectancy of life definitely decreased.

Although tuberculous meningitis among infants has decreased greatly in many parts of this country, in the last two decades, there are still many deaths from this disease which could be prevented if physicians everywhere would make certain that expectant mothers do not have tuberculosis in such a form that it will be transmitted to their infants. When the disease is found in the chest of an expectant mother, it can often be treated successfully while the pregnancy continues, thus, saving her a long period of invalidism or even death and preventing contamination of the infant and other members of her family.

Many physicians and nurses dislike to hear statements concerning the degree to which some of our hospitals are contaminating their students of nursing and medicine with tubercle bacilli. Nevertheless, the fact exists and there is nothing to do but to face the situation squarely and solve the problem. A number of workers in various parts of the world have called attention to this problem and some have proposed a logical solution. Some hospitals, admitting girls to their schools of nursing with 50 to 70 per cent or more contaminated, infect for the first time all of these uncontaminated girls and probably reinfect those who have been previously contaminated, thus graduating classes with 100 per cent of their members containing foci of tuberculosis in their bodies. It is generally believed that a hundred years ago nearly all young adults in the general population had been contaminated with tubercle bacilli. At that time, the mortality in this country was approximately 450 per year for each 100,000 of the population. It would seem logical to conclude, therefore, that if we contaminate 100 per cent of our students of nursing and medicine, we might expect a morbidity and mortality among them similar to that of the general population of a century ago.

Thus, while tuberculosis in the general population has very materially decreased, in a good many of our schools of nursing and medicine, we have not taken a single step forward for one hundred years. This does not apply to the schools of nursing and medicine, which have true figures showing

that such conditions do not exist in them. We are living in a day of facts as far as tuberculosis is concerned and he who has no facts based upon figures should not speak until they are available. The solution is simple; it consists of nothing more than what we have found adequate in our hospitals in dealing with such communicable diseases as typhoid fever and diphtheria, namely, contagious disease technic. When all hospitals demand a careful examination for tuberculosis of every patient on admission, regardless of the condition for which the patient enters the hospital and when all those found to have tuberculosis in a communicable form are placed in rooms and wards where strict contagious technic is practiced, we will no longer see all of our students becoming contaminated and 10 per cent or more falling ill from tuberculosis during the next decade or two. This problem is not to be looked upon lightly by the nursing and medical professions; this is not the time to take heed to the advice sometimes given, that "we should go slow" but it is the time to quickly put forth every effort to stop the contamination and the subsequent destruction among our students and graduates of schools of nursing and medicine. The medical and nursing professions are responsible for the solution of this problem.

Tuberculous patients have a strong tendency to migrate. They congregate in large numbers of places renowned for the treatment of tuberculosis, such as the Carolinas, the region of the Adirondacks, particularly Saranac Lake, and the states of the southwest. Many such patients are indigent and constitute a serious problem for the local workers; for example, from January 1 to August 1, 1934, 209 indigent, transient men and women were examined at the Denver Municipal Tuberculosis Dispensary, 108 of whom had pulmonary tuberculosis. Obviously, since they did not have a legal residence in Denver, they constituted a detriment to themselves and to the community, that is already overwhelmed with a local tuberculosis problem of vast proportions. Therefore, it behooves every physician throughout the country to attempt to convince all tuberculous patients, who are indigent or nearly so, to seek care in institutions where they have legal residence.

When indigent tuberculous patients begin to migrate, they spread large numbers of tubercle bacilli and lose their best chances of recovery.

The veterinarians and closely allied groups have taught us how easy it is to control tuberculosis among animals when one starts from the beginning. In their work, a clear vision of tuberculosis control led them to the beginning of the disease; that is, when an animal reacted positively, no matter how healthy in appearance, it was considered a potential reservoir of tubercle bacilli. They knew that not all such animals would fall ill from tuberculosis or become disseminators of bacilli. They also knew that some would fall ill. Inasmuch as they had no test or phase of examination to determine which tuberculin positive animals would later become spreaders of tuberculosis, they slaughtered all, with the result that they have made the greatest demonstration of tuberculosis control that the world has ever seen. Already two-thirds of all the counties of the entire country are accredited. In human medicine we can use the same tuberculin test in finding clinical cases of tuberculosis, as well as potential cases. Fortunately, our methods of treatment have advanced almost as fast as those of diagnosis, therefore, where the veterinarian slaughters we have three methods of dealing with tuberculous human beings which are just as effective: the first is isolation of those who cannot be treated successfully or whose sputa cannot be rendered negative to tubercle bacilli. To take such patients out of a community or to isolate them in their homes is just as effective so far as tuberculosis control is concerned as the slaughter of tuberculous animals. Second, large numbers of cases are now treated, particularly by collapse therapy, so that their lesions no longer eliminate tubercle bacilli which reach the bodies of others. This is also as effective as slaughter in the cattle family. Third, in the human family, we can resort to teaching of the contagious nature of tuberculosis so that the potential case may be kept under close observation through periodic examinations for the appearance of the clinical type of disease.

Some still cling to the fatalistic viewpoint that everyone must sooner or later

become contaminated with tubercle bacilli. It is now obvious that such a viewpoint is unsound. Approximately ten years ago, Krause said: "There may come a time when not enough tubercle bacilli 'remain at large to infect mankind sufficient to maintain a given level of mortality with, of course, environmental factors what they are.' Perhaps that time is already here." Again he said: "I am inclined to believe that children with tuberculous infection are becoming fewer. No doubt much of my belief rests upon the shaky premise that such ought to be the case. When eighty-eight die of tuberculosis where two hundred died twenty-five years before; when 150,000 pulmonary patients enter sanatorium walls every year where perhaps not 10,000 sought isolation a quarter century ago; when several million of our city children are getting fairly clean milk when their older brothers and sisters were accustomed to drink it in every condition other than clean, I cannot help believing that more children than ever before are unconsciously steering clear of the tubercle bacillus. Until lately I was always inclined to look with some suspicion on reports of the incidence of childhood infection (as determined by skin tests), which made this unusually low according to our standard ideas formed largely between 1910 and 1915. Today there is just about half the general mortality from tuberculosis that there was then; and I am beginning to wonder whether these later records are not revealing to us what we are too blind to see: that is, that the number of infected children is growing smaller."

In discussing the situation in New York City, Drolet says: "With a grand total of 41,807 persons known to the health department as suffering from tuberculosis during the year 1921, and 31,621, or ten thousand fewer, in the year 1931, why should we assume that dissemination of tubercle bacilli is on the same scale at present as formerly? With an increasingly effective control of home sources of tuberculosis, especially in the city; with more than twelve thousand patients rushed annually to tuberculosis hospitals and sanatoria, whether they are bed-cases or not; why assume that the prevalence of tuberculous infection has remained constant? Many records are now

available showing a large proportion of children, and even of adolescents, as yet uninfected with tuberculosis during the first twenty years of their lives. Why accept that twenty years later all must be infected?"

With the overwhelming amount of evidence to show that the sources of contamination with tubercle bacilli are rapidly decreasing in number and with the actual finding of marked decreases in the incidence of positive tuberculin reactors in so many parts of the country, it is obvious that we are headed toward the ultimate goal of reducing the number of disseminators of tuberculosis in both the human and animal population to the point of rendering tuberculosis a minor disease.

Pasteur made a very significant statement to the effect that it is within the power of man to free the human family of all communicable diseases. Tuberculosis is a communicable disease.

SURGICAL TREATMENT OF DUODENAL ULCER*

WITH SPECIAL REFERENCE TO ACUTE
PERFORATION

By

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Chronic duodenal ulcer, due chiefly to its complications, is of equal importance to the surgeon and the internist. Roentgenology, the most important criterion in making a diagnosis of this condition, has taught us that duodenal ulcer in this country occurs approximately ten times more frequently than gastric ulcer. The exact cause of duodenal ulcer is not known, but since the treatment of any disease concerns itself primarily with removal of its cause, it might be in order to review briefly the known etiologic factors in the production of peptic ulcer. The infectious theory as advocated by Rosenow,¹ while not explain-

ing the whole picture, is gaining much support. He has been able to isolate streptococci from surgically removed peptic ulcers, which, when injected intravenously into rabbits, produced ulcers in the stomach or duodenum similar to those found in man. However, the ulcers healed rapidly, thus differing from those in man, which have a tendency to become chronic.

Mann² and his associates have emphasized the chemical or acid factor in the production of peptic ulcer. They have been able to produce chronic ulcers in dogs similar to those found in the human, by excluding from the stomach and duodenum the normal alkali-secreting mechanism. This method consists of sectioning the pylorus and closing the distal end. The first portion of the jejunum is then sectioned and its distal end anastomosed to the pyloric end of the stomach. The proximal end of the jejunum is anastomosed to the ileum, thus shunting the alkaline secretions into the ileum. The ulcer begins to form in about one month after operation, occurring in the jejunum just distal to the gastrojejunal anastomosis, at the point where the acid gastric contents strike first and with the greatest force on a mucosa which is accustomed to an alkaline medium. It should be mentioned here that the neurogenic factor in the causation of peptic ulcer is fairly well established.

Diagnosis: I would like to make only a few remarks about the diagnosis of duodenal ulcer, first to emphasize that the clinical syndrome of gastric and duodenal ulcer is the same. Each presents the characteristic daily sequence during an attack; namely, pain, food, ease. The only means then of localizing the lesion preoperatively is by roentgenologic examination.

Peptic ulcer may remain latent and first manifest itself by hemorrhage or perforation. Hemorrhage occurs in 20 to 30% of cases, while perforation is noted in approximately 5%.

The classical symptoms of perforations of the anterior wall of the duodenum, i. e., the sudden onset of severe epigastric pain, the rigidity of abdominal muscles, etc.,

*From the Surgical Division of the Hillman Hospital.

*Presented at a meeting of the Jefferson County Medical Society, Feb. 19, 1934.

1. Rosenow, E. C.: Focal Infections and Elective Localization of Bacteria in Appendicitis, Ulcer of Stomach, Cholecystitis and Pancreatitis, Surg. Gynec. and Obst. 33: 19-26, 1931.

2. Mann, F. C., and Bollman, L. J.: Experimentally Produced Peptic Ulcers. Development and Treatment, J. A. M. A. 99: 1576-1582 (Nov 5.) '32.

need no further comment. However, there is one condition which should always be borne in mind in making a differential diagnosis. I refer to the bite of the Black Widow spider. There have been three patients explored for perforated peptic ulcer at the Hillman Hospital in the last 18 months who were negative to exploration and later were found to have been bitten by a spider.

While patients who have been bitten by a spider present the symptoms of sudden onset of severe abdominal pain, generalized rigidity of abdominal muscles and vomiting, the muscle rigidity is not limited to the abdomen. A history can usually be obtained of the patient having visited an out-house before the onset of symptoms and frequently a small red spot can be detected at the site of the bite.

Another point in the differential diagnosis of acute perforation is the occasional case which simulates a perforated appendix with generalized peritonitis. Leakage from an acutely perforated ulcer first gravitates to the right lower quadrant causing marked peritoneal irritation with resulting pain in this region. The cases causing confusion in diagnosis are usually those in which the perforation is pin-point in size with slow leakage, thus not presenting the sudden explosive symptoms characteristic of acute perforation.

Three such cases occurred in a series of acute perforations to be presented later in this paper. In these three cases, a McBurney incision was first made and when the free turbid fluid was encountered and the appendix was not ruptured a second incision was made and the perforated ulcer located. A fourth case was not explored further after the free fluid was encountered. The appendix being removed, the abdomen was closed with drainage. At autopsy a perforated duodenal ulcer was found.

The appendix may well be inflamed from being bathed in duodenal secretion, but unless it is ruptured these patients should always be explored further for a perforated peptic ulcer.

Perforations on the posterior wall of the duodenum present a subacute picture, the ulcer plastering itself to adjacent structures. The symptoms manifested are chiefly those of a localized peritonitis.

In addition to hemorrhage and perforation, obstruction is a complication of duodenal ulcer which is of interest to the surgeon. It usually manifests itself late in the disease. Its most characteristic symptoms are the retention type or vomiting and the resulting dehydration and alkalosis. In the latter condition the blood urea is elevated, the blood CO_2 combining power is increased and the chlorides are diminished.

Treatment: It is generally agreed that once a diagnosis of gastric ulcer has been made and it does not disappear after a few weeks of medical treatment, it should be subjected to surgery. It is impossible to rule out malignancy in gastric ulcer until it is examined under the microscope. If the ulcer is small, knife or cautery excision followed by gastro-enterostomy or pyloroplasty is sufficient; on the other hand, if excision cannot be accomplished easily and safely, it is advisable to do a subtotal gastrectomy followed by one of the various types of anastomoses, the posterior polya type (anastomosis of the jejunum to the resected end of the stomach) being the most common procedure.

It is so rare to find malignancy in the first portion of the duodenum that its incidence can be considered nil. It is the treatment of ulcers in the duodenum that has caused so much controversy, not only as to when a duodenal ulcer becomes a surgical problem but also what type of operation is best suited for this condition once it has been delegated to the surgeon.

Surgical treatment of duodenal ulcer is indicated certainly in the presence of its *three* complications, namely, *perforation*, *obstruction* and *repeated hemorrhage*. It is also indicated in that group of cases which has had repeated medical treatment without relief. Duodenal ulcers with a history of severe pains, suggesting a penetrating type of ulcer, should be operated on before perforation occurs. For economic reasons certain uncomplicated duodenal ulcers should also be treated surgically.

All uncomplicated duodenal ulcers should be treated medically until ample time has been given for them to heal. Medical treatment is especially advisable in duodenal ulcer because of the youth of the patient, the mildness of the symptoms and in the presence of co-existing disease.

The treatment of duodenal ulcer is based on two phenomena: first, that something causes local necrosis of the tissue; and second, that the acid and pepsin of the gastric juice hinder healing. The treatment should then be aimed at the removal of foci of infection and an attack on the acid factor, either by diet and alkalines or by surgery.

Surgical Treatment of Duodenal Ulcer: The majority of the surgeons of this country, as well as those of the British Isles, have advocated the more conservative operations for the cure of duodenal ulcer. They have obtained very satisfactory results from either gastro-enterostomy or the local excision of ulcers followed by pyloroplasty.

The surgeons of Germany and Austria and a small group in this country, notably Lewisohn,³ Berg⁴ and Strauss,⁵ claim a higher percentage of cures by the more radical treatment of duodenal ulcer; i. e., subtotal gastrectomy followed by the Bilbroth I, II or the polya type of anastomosis.

Walters⁶ of the Mayo Clinic, while visiting the German clinics, observed that the lesions in that country differed from those of the United States. The surgically removed lesions in Germany showed a marked gastritis associated with the ulcer. This gastritis was usually ulcerative or hemorrhagic in type. On his return to the Mayo Clinic, he purposely carried out a series of subtotal gastrectomies for duodenal ulcer and concluded from a comparative study that duodenal ulcer in this country is rarely associated with gastritis and that the two countries are dealing with different types of lesions. In 25 cases of gastric resection for duodenal ulcer, Walters and

Church⁷ found that only three showed gross and three microscopic evidence of gastritis. This might explain the difference in the surgical procedures of the two countries.

The chief advantage of the radical operation for duodenal ulcer, as claimed by its advocates, is the smaller percentage of gastro-jejunal ulcers following operation.

CHART 1
ANALYSIS, ACUTE PERFORATION OF DUODENAL
ULCER TREATED BY SIMPLE CLOSURE

No.	Age	Time Elapsing	Result	Cause of Death
1	26	12 Hours.....	Cured.....	
2	28	6 Hours.....	Cured.....	
3	51	36 Hours.....	Cured.....	
4	30	8 Hours.....	Cured.....	
5	43	?	Cured.....	
6	33	7 Hours.....	Cured.....	
7	24	11 Hours.....	Died.....	Subphrenic Abscess
8	36	4 Hours.....	Died.....	General Peritonitis
9	38	5 Hours.....	Died.....	Subphrenic Abscess
10	50	6 Hours.....	Died.....	Acute Int. Obstru'n Gen. Peritonitis
11	23	12 Hours.....	Died.....	Gen. Peritonitis
12	38	16 Hours.....	Died.....	Shock
13	19	18 Hours.....	Died.....	General Peritonitis
14	48	30 Hours*.....	Died.....	Duodenal Fistula
15	31	24 Hours.....	Died.....	Pulmonary Abscess
16	37	48 Hours.....	Died.....	General Peritonitis
17	29	48 Hours Plus.....	Died.....	General Peritonitis
18	28	?	Died.....	General Peritonitis
19	?	?	Died.....	General Peritonitis

It will be noted in this group that seven of the cases were operated on more than 12 hours after perforation. While in most instances the delay occurred before the patient reached the hospital, a few cases were under observation in the hospital several hours before operation.

Thirteen (13) deaths—mortality of 68%; 10 deaths due to peritonitis—77%.

*Appendectomy performed also.

The mortality following subtotal gastrectomy ranges from 5 to 15% and the incidence of subsequent gastrojejunal ulcer is about 1%. The percentage of cures ranges from 75 to 98%.

The mortality from gastro-enterostomy for duodenal ulcer is approximately 1%.⁶ The incidence of subsequent gastrojejunal ulcer is approximately 2.5% and the per-

3. Lewisohn, R.: Gastro-Duodenal Ulcers. Partial Gastrectomy vs. Gastro-Enterostomy in Their Surgical Treatment, J. A. M. A. 89: 1649-1652 (Nov. 12) '27.

4. Berg, A. A.: The Mortality and Late Results of Subtotal Gastrectomy for the Radical Cure of Gastric and Duodenal Ulcer, Ann. Surg. Feb., 1930.

5. Strauss, A. A., Black L., Friedman, J. C., Meyer J., and Parker, M. L.: Subtotal Gastrectomy for Duodenal Ulcer, J. A. M. A. 95: 1883-1889.

6. Walters, W.: The Choice of Surgical Procedures for Duodenal Ulcer, Ann. Surg. Aug. '32.

7. Walters, W., and Church, G. T.: The Frequency of Gastritis Associated with Duodenal Ulcer, Proceedings of the Staff Meetings of the Mayo Clinic, Dec. 6, 1933.

centage of cures is reported as 89.5% in Great Britain and 90% at the Mayo Clinic.

Judd⁸ recently reported a mortality of less than 1/2 of 1% in 1,363 cases of duodenal ulcer treated by Judd excision followed by pyloroplasty, with 90% cures. Finney⁹ reports 80% cures following his pyloroplasty for duodenal ulcer.

From the foregoing statistics, it would seem that at least in this country the conservative operations for duodenal ulcer with their mortality and high per cent of cures are certainly the procedures of choice.

CHART 2

ANALYSIS, ACUTE PERFORATION DUODENAL ULCER
TREATED BY JUDD EXCISION, CLOSING
AS PYLOROPLASTY

No.	Age	Time Elapsing	Result	Cause of Death
1	29	3 Hours.....	Cured..	.....
2	48	3 Hours.....	Cured..	.....
3	55	3 Hours.....	Cured..	.....
4	27	4 Hours.....	Cured..	.....
5	29	7 Hours.....	Cured..	.....
6	37	8 Hours.....	Cured..	.....
7	33	11 Hours.....	Cured..	.....
8	27	28 Hours*.....	Cured..	.....
9	27	24 Hours.....	Cured..	.....
10	33	3 Hours.....	Died..	Postoperative Psychosis, Probably Alcoholic

It can be readily seen that in this group treated by excision with pyloroplasty, the patients were better operative risks.

Note:

Three additional cases of acute perforation of duodenal ulcer have been operated by Judd excision closing as pyloroplasty, with no deaths, making a total of 13 cases with only 1 death.

Excision of Ulcer with Pyloroplasty Versus Gastro-Enterostomy for Duodenal Ulcer: Due chiefly to the liability of development of a gastrojejunal ulcer at the point of anastomosis of a gastro-enterostomy, local excision of the ulcer, followed by a pyloroplasty, has gained much favor in recent years.

Most duodenal ulcers occur within 2/3 of an inch of the pylorus, which makes local excision and pyloroplasty applicable; also, the majority of ulcers coming to sur-

gery are located on the anterior wall of the duodenum.

In 1927 Judd¹⁰ reported a series of cases of duodenal ulcers in which he described an operation in which local excision, followed by pyloroplasty, was performed.

He excises a rectangular segment including the anterior half of the pyloric sphincter, together with the cap of the duodenum and the ulcer, closing the defect transversely as a pyloroplasty.

The advantages of this procedure according to Judd are:—

- (1) The lesion is removed.
- (2) The liability of gastrojejunal ulcer is eliminated, making it especially indicated in ulcers in young people or those with high acids.
- (3) It is especially indicated in duodenal ulcer with hemorrhage, where the ulcer can be removed.
- (4) It affords inspection of the posterior wall for additional ulcers, which, when present, can be treated by cauterization or excision with suture.
- (5) The sphincter activity of the pylorus is destroyed, converting the stomach and duodenum into a continuous part of the gastro-intestinal tract permitting the gastric contents to pass quickly into the duodenum.
- (6) It safeguards against future perforations.
- (7) Patients are less prone to postoperative pulmonary complications.
- (8) If any future surgery of the stomach is necessary, the anatomy is not disturbed.

Judd states further that local excision can be carried out in more than 50% of cases of surgical duodenal ulcer.

He advocates gastro-enterostomy for cases of duodenal ulcer complicated by obstruction and for those cases in which the duodenum is fixed and is not easily accessible for local excision. Gastro-enterostomy is the ideal operation for patients who are middle aged or past with obstruction. They usually do not have a high acidity and therefore are less likely to develop gastrojejunal ulcer.

8. Judd, E. S., and Hazeltine, M. E.: Results of Operations for Excisions of Ulcers of the Duodenum, *Ann. Surg.* Oct. 1930.

9. Finney, J. M. T. Quoted by Walters (6).

10. Judd, E. S., and Nagel, G. W.: Excision of Ulcer of the Duodenum, *Surg. Gynec. and Obst.* July '27.

He reported, in 1930, 464 cases of duodenal ulcers* treated by Judd excision with pyloroplasty, with only 2 deaths and 90% cured. He found in this series 373 ulcers on the anterior wall; 59 on the anterior and posterior walls; and only 7 on the posterior wall.

Another advantage of Judd excision with pyloroplasty is that the pyloric outlet is made larger by the operation. By further application and experience more cases can be done in this manner. The physiologic continuity of the gastro-intestinal tract is not disturbed as is the case in gastro-enterostomy.

ACUTE PERFORATION OF DUODENAL ULCER

In spite of the great advances in surgery of the duodenum, the mortality following operations for acute perforation of duodenal ulcer remains appallingly high. Fleming,¹¹ Jefferson Hospital, in 1931 reported 994 cases collected in the literature with a mortality of 23.6%. The majority of deaths are due to acute diffuse peritonitis; 13% of deaths in this series were due to pulmonary complications.

Gibson¹² in 1928 reported 123 cases of acute perforation of the duodenum at Cornell Medical Division, N. Y. Hospital, with a mortality of 18.6%; White and Patterson,¹³ Roosevelt Hospital, N. Y., in 1931 reported 79 cases with a mortality of 21.5%. Showan¹⁴ of Detroit reported, in 1933, 227 cases with a mortality of 24.2%; Hinton¹⁵ in N. Y. reported, in 1931, 105 cases with a mortality of 19%.

A great factor in the mortality is the time allowed to elapse between the time of perforation and that of operation. Perforation occurs more frequently in the male. White reports only 3% in females; Showan reports only 2% in females.

In the literature, the majority of acute

perforations are treated at operation by simple closure; i. e., suturing over the perforation with interrupted sutures or by purse string suture. A small percentage receive gastro-enterostomy in addition to simple closure.

The question of drainage is a debatable one. Britt¹⁶ reported cases cultured at time of operation in 126 cases. In those cases operated on 6 to 12 hours after perforation 74% were positive; 93% of those operated on 12 hours or more after perforation were positive. The *Streptococcus hemolyticus*, *Streptococcus viridans*, *Bacillus coli*, and staphylococci were the organisms usually found in these cultures.

White advises non-drainage in early cases and drainage in late cases.

Fleming advises suprapubic drainage in late cases, non-drainage in early ones. Gibson advises against drainage.

White explains the increased report of perforated gastric ulcer in the literature as due to the fact that edema often obliterates the anatomic landmarks of the pyloric vein. This may cause an ulcer of the duodenum close to the pylorus to appear gastric in origin. He stated that 5% of the perforated peptic ulcers are gastric in origin.

I wish to report an analysis of 33 cases operated on for acute perforation of duodenal ulcer. Thirty-one of these cases were treated at the Hillman Hospital, including all those on record in this institution from 1920 to the present time. Twenty-five of this group were white and eight colored. There was only one female in the series. The youngest patient was 19 years of age and the oldest 60, the majority of the cases falling between the ages of 20 and 40. All except one of these patients gave a previous history of peptic ulcer. The leucocyte count averaged about 15,000.

Of the 33 cases operated, 16 died—a mortality of 48%. (a) Nineteen cases were treated by simple closure, either by purse string or limbert suture, with 13 deaths—a mortality of 68%. (b) Ten cases were treated by Judd excision with pyloroplasty with one death, a mortality of 10%.* (c)

16. Britt: Quoted by Fleming, B. L. (11).

*Since this paper was read at the Jefferson County Medical Society, three additional cases of acute perforation of duodenal ulcer have been operated on with no deaths, making a total of 13 cases with only 1 death.

11. Fleming, B. L.: Acute Perforations of Duodenal Ulcers, J. A. M. A., 97: 6-11 (July 4) '31.

12. Gibson, C. L.: Acute Perforations of Ulcers of the Stomach and Duodenum, J. A. M. A. 91: 1006-1008 (Oct. 6) '28.

13. White, W. C., and Patterson, H. A.: Late Results of Simple Suture in Acute Perforations of Duodenal Ulcers, Ann. Surg. Aug. 1931.

14. Showan, H. K.: Acute Perforated Gastric and Duodenal Ulcers, Ann. Surg. Aug. '33.

15. Hinton, J. W.: Acute Perforated Ulcers of Stomach and Duodenum, Surg. Gynec. and Obst. 52: 778-783, Mar. '31.

Three cases received a gastro-enterostomy in addition to simple closure, with one death. (d) One case was treated by subtotal gastrectomy with a polya type of anastomosis. This patient died.

I am convinced that local excision, followed by pyloroplasty, has a definite place in the treatment of acute perforations of duodenal ulcers. If the patient is in good condition and is operated on early, say within the first six hours preferably, the risk should be no greater than with simple closure. It requires only a few minutes longer to do the former operation. It has the advantage of removing the infected ulcerative tissue surrounding the perforation so that closure can be made with normal tissue. The same advantages hold here as for this operation in non-perforated ulcers. The postoperative course in these cases is surprisingly smooth in the majority of instances.

Simple closure is indicated when the ulcer is not easily accessible for excision, when the condition of the patient does not seem to permit further surgery, and in the presence of obstruction. In the latter case it may or may not be advisable to perform a gastro-enterostomy in addition to simple closure, depending on the condition of the patient.

In addition to the above ten cases of acute perforation, I have performed the Judd excision with pyloroplasty on three clean cases of duodenal ulcer, giving histories of severe pains with the attack, suggesting a penetrating type of lesion. Two of the patients also gave histories of hemorrhage. In one case there was present, in addition to the ulcer on the anterior wall, a second hemorrhagic crater ulcer on the posterior duodenal wall. This was cauterized and sutured over with interrupted sutures. Each case made an uneventful recovery and has had no further symptoms.

CONCLUSIONS

(1) Conservative operations for duodenal ulcer in this country seem to give the best results.

(2) Local excision with pyloroplasty is the operation of choice for duodenal ulcer, uncomplicated by obstruction and when the duodenum is accessible for such a procedure.

(3) Gastro-enterostomy should be reserved for those duodenal ulcers complicated by obstruction or where the duodenum is fixed and cannot be mobilized.

(4) Local excision, followed by pyloroplasty, has a definite place in the treatment of acute perforations of duodenal ulcers.

SIMULTANEOUS INFECTION WITH TYPHOID AND MALARIA

By

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In 1906, under the title of "Mixed Malaria and Typhoid Fever," I reported a case (J. A. M. A., Aug. 4, 1906) of simultaneous infection with typhoid and malarial fever, in which the clinical course of the disease and laboratory findings proved a double infection. This report gave rise to much correspondence, which proved that a double infection was not so unusual as generally supposed.

One letter of special interest was received from Dr. W. Gilman Thompson, author of Thompson's Practice of Medicine, who wrote in part as follows: "I ran across your published case and thought that you might like to see the record of the first mixed infection cases in which the plasmodium was actually demonstrated . . . I am very skeptical about the possibility of breeding such organisms as the plasmodium and bacterium to form a 'hybrid' as you term it, though we have all sorts of clinical 'mix-ups' with the *Bacillus typhosus*, as for example when the *Bacillus coli communis*, or the pneumococcus, occurs with it . . . I saw a great many mixed infections among some 200 soldiers that I had charge of after the Santiago campaign, but of course such cases are almost unknown as indigenous to this locality."

In order to make plain my statement regarding a "hybrid" I wrote Dr. Thompson as follows: "We could hardly conceive of a flora and fauna conjugation forming a composite morphologic entity, or genus; that was not my intention in speaking of the so-called mixed infection as a 'hybrid,' but that the same host may, and sometimes does, entertain two guests whose morphologic appearance and behavior so greatly

differ . . . I doubt the propriety of calling such concomitant infections 'mixed' infections, believing that it is more in keeping with our concept of nosology to term them simultaneous infections, inasmuch as the separate organisms are co-existent and demonstrable in same patient." The untimely death of Dr. Thompson prevented further correspondence. Having treated two other cases of simultaneous infection with typhoid and malarial fever since reporting the first case, it may be of interest to report one of the other cases occurring in August 1927. This was not the last case, but because of its unusual course it is reported.

The patient, a white female, married, age 18, was taken sick with lassitude, anorexia, fever and other symptoms of typhoid fever. As there was no improvement, but a steady increase in severity of symptoms, a Widal was made and reported positive, but to make certain the diagnosis a specimen of stool and urine was sent to the State Laboratory for cultural test for typhoid fever. On August 31, I received a positive report. The case ran a usual course when suddenly the gradually declining temperature curve lost much of its symmetry by sudden sharp elevation, accompanied, or preceded by chills and convulsions, indicating some complication.

The kidneys showed no involvement, nor any of the other organs, so far as could be ascertained. Suspecting a double infection I made a blood examination and found a decided leucopenia and estivo-autumnal parasites crowding many of the red cells. A slide, with the blood, was sent to the State Laboratory which reported on same, September 16, as positive for estivo-autumnal parasites. By this time the case seemed hopeless, as all nourishment and medicines were rejected. However, quinine dihydrochloride was given in massive doses intramuscularly, with so much improvement in the patient's condition as to permit a cure by further treatment.

It is not likely that such simultaneous infections are to be found in our locality, because of the excellent results obtained by our State Board of Health in its departments of sanitation, prophylaxis and epidemiology; but all parts of our country are not so favored. Permit me, therefore, to

suggest that whenever complications arise in the course of typhoid fever, or malarial fever, a simultaneous infection be suspected and laboratory examinations be made until the suspicion be either confirmed or negated. Such service to the patient will save time, mitigate suffering and, in some cases, save life.

HEART DISEASE*

By

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Of all the diseases from which man may die, heart disease is the leading cause in the United States today. Last year in Jefferson County, as for many previous years, heart disease led each of the other causes in the total number of deaths. There were 725 deaths in our county from this malady alone during 1934. The purpose of this paper is to mention the common causes of heart disease, and discuss briefly some of the signs and symptoms.

The four chief causes are (1) rheumatic fever, (2) syphilis, (3) arteriosclerosis, and (4) hypertension.

Less common causes are (1) chronic focal infection, (2) congenital heart disease, and (3) acute infections as scarlet fever, influenza, diphtheria, pneumonia. Occupation and improper habits of living not infrequently predispose to heart failure.

The rheumatic fever group varies as an etiologic factor from 20 to 40% in different parts of the United States. This type is fairly common in this section of the country. Many of the so-called "growing pains" of childhood are unquestionably mild rheumatic fever cases. Rheumatic fever is usually found under thirty years of age.

A careful history and a positive Wassermann and Kahn test, together with lesions in the heart, heart valves, and aorta help establish syphilis as a cause of heart disease. The heart is usually enlarged; at times, markedly so. Most aneurysms are due to syphilis.

Arteriosclerosis or hardening of the arteries can usually be demonstrated by feel-

*Read by invitation before the Birmingham District Dental Society, March 19, 1935.

ing the radial pulse at the wrist. The blood pressure may or may not be elevated. This type of heart disease is usually seen around fifty years of age or later in life. Examination of the eye grounds may reveal signs of sclerosis of the arteries.

Hypertensive heart disease is more prevalent in obese individuals. Most of these cases are around forty years of age, though many show obesity and an elevated blood pressure much earlier in life.

I wish to emphasize chronic focal infection as a factor which is often overlooked or its value underestimated. According to Russell L. Haden of Cleveland, who has done some excellent work in dental focal infection, one seldom sees the disastrous results in the heart until after thirty years of age. Dental and tonsillar infections may start earlier in life and continue for several years. Other foci occasionally encountered are sinuses, gall bladder, cervix, prostate and rectum.

Haden says: "Bacteria obtained from chronic foci in patients with heart disease due to focal infection produced heart lesions in a very high proportion of rabbits injected intravenously. The therapeutic results of late removal of chronic foci are disappointing, because the lesion caused by the focus is so often permanent. The early removal of chronic foci should lessen the incidence of heart disease."

In a case where heart disease already exists extraction of teeth should be done with extreme care. May I presume to suggest that only a few teeth be extracted at the time. It is in these patients that the dentist and physician should work together for the best interest of the patient.

A dose of sodium bromide (gr. 10-30), one half hour before the extraction, at times converts a nervous person into one who is very cooperative. Extreme cases may require morphine.

EARLY SIGNS AND SYMPTOMS

The first symptom in heart disease is shortness of breath on exertion. Going up steps, walking fast, or running to catch a street car may bring this shortness of breath on. Heart hurry is noticed quite early. The rate is up ten to fifteen beats per minute. The pulse may resume its normal rate when at rest, but it goes up again

too readily after exercise. The third symptom in the order of appearance is fatigue. There is a loss of former endurance, the patient becoming easily tired physically and mentally. The patient is conscious of a substandard condition, but it may not be referred to the heart. Fourth is a feeling of oppression about the chest which is likely to appear on severe exertion. Pain over the heart may follow exercise.

Irregular heart beats make their appearance at this time. Edema of the feet and ankles is noticed at night, but disappears after a night's rest. The liver may be slightly enlarged. Examination of the heart may show a slight enlargement. It may show also some abnormality as faintness of sounds, murmurs, or irregularity. Some elevation in blood pressure accompanied by headache is found at times. X-rays, basal metabolism tests and electrocardiograms are helpful diagnostic procedures, but are only confirmatory.

One must keep in mind that every patient may not complain of all of the symptoms enumerated above, but these are the essential features that characterize the average case. The symptoms of heart disease vary a great deal. A history of referred pains to the shoulders or down the arms may be obtained. Gastro-intestinal disturbances such as nausea and vomiting are present in some.

All of us have read newspaper headlines many times where some one died suddenly from "acute indigestion." Modern knowledge has taught us that the real cause of death was heart disease. A periodic health examination by the family physician would have found these heart conditions earlier and helped to prolong life. The heart always gives warning with certain danger signals, and does not stop suddenly without a definite reason.

Heart disease is a chronic process which has existed for some time before any symptoms develop. Thoroughness and the proper evaluation of both history and physical findings are necessary for a correct diagnosis. The chronic degenerative diseases that come on past middle life still take their toll, and, as already noted, heart disease heads the list.

It must be remembered that the increase in the span of human life is due to the re-

duction of infant mortality rather than to the prolongation of the sunset years of life.

An old adage physicians were wont to use was that "a person is as old as his or her arteries." Some one has answered by saying that a woman is as old as she looks and that a man is never old until he quits looking.

BIBLIOGRAPHY

1. Smith, S. Calvin: The Preclinical Stage of Heart Disease, *J. A. M. A.* 86: 1902-1903 (June 19) 1934.
2. Christian, Henry A.: Heart, *J. Indiana M. A.* 21: 51-56, Feb. '28.
3. Keating, Emmet: When the Cause of Heart Disease is Obscure, *Illinois M. J.* 63: 116-120, Feb. '33.
4. Lankford, J. S.: Progressive Symptoms and Signs in the Development of Heart Disease, Reprinted from *American Medicine*, 21: 696-698, Nov. '26.
5. Haden, Russell L.: Focal Infection as a Factor in Heart Disease, *Ohio State M. J.* 28: 276-280, Apr. '32.
6. Halsey, Robert H.: Etiology of Heart Disease, Reprinted from *J. A. M. A.* 98: 593-598 (Feb. 20) '32.
7. Major, Ralph H., and Wahl, H. R.: Paroxysmal Tachycardia Associated with Focal Myocarditis, Reprinted from *J. A. M. A.* 86: 1125-1126 (Apr. 10) '26.
8. Strietmann, W. H.: Focal Infections in Relation to Cardiac and Vascular Disease, *California and West. Med.* 38: 358-361, May '31.

THE DOCTOR IN SOME OF HIS RELATIONS TO LIFE INSURANCE*

By
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All forms of insurance constitute, in the last analysis, a species of gambling and the gambling instinct in the genus *homo* seems practically universal. The sporting gamble is evident when Lloyds gives definite odds on no rain on certain days, the life span of Hitler or whether or not Europe will see another war in five years. In life insurance, to be sure, actuarial science has eliminated some of the elements of chance but the contract still means that the company, giving odds, bets the policyholder he will outlive his expectancy. The policyholder bets that he will be in the small group

in which the percentage of mortality exceeds the expected. The presumption of the insuring company is that, with a strong desire to live, the insured will do all in his power to prolong his life and thereby lose his bet. However, the policyholder may have covered up a coronary disease or misrepresented his true financial status, which in the one case would tend definitely to impair his earning power and shorten his life or in the other might even tempt him to take the short route of suicide to win his bet. True, such eventualities have been borne in mind in the assessing of rates based on the general insurance experience; but the great depression, through which we have just passed, in this as in some other respects has altered some of our view points.

Let us for convenience in our discussion have a look at the doctor and life insurance from four different angles.

First, the doctor is interested in life insurance as a prospective or actual policyholder. As a prospective purchaser of income, disability or life insurance he chooses a substantial company known for honest and conservative dealing. Very often the bulk of his estate is to be derived from life coverage since opportunity for providing any considerable competence by members of the medical profession no longer exists. It is obvious that he like any other sane investor desires the greatest protection for the lowest possible cost. He then, as an intelligent citizen, realizes the need for close governmental supervision of insurance companies and he accepts the principle of fair legitimate profit in their business. He should then for his own selfish interest assist the companies in keeping low mortality rates so that low premium rates will result.

Having procured life insurance coverage, the wise doctor notes the present trend toward annuities both for himself and his dependents and usually elects to leave the proceeds of his policies to be administered by the insurance company in educating his children and providing safe steady income for life for the loved ones left behind. This view of life insurance by the doctor is personal rather than professional and differs in no way from the attitude of any wise educated man.

*Presented to the Association in annual session, Mobile, April 18, 1935.

The second look at insurance relations is that of the larger group, the physicians engaged in practice either privately or in hospitals, and we are especially interested in their attitude toward insurance companies requesting information about their patients or former patients.

It seems to me that much misapprehension exists and often unfair situations come about between doctors and insurance companies because fundamental considerations are lost sight of. For illustration, a colleague of ours in another city writes for a journal an article taking insurance companies to task in this fashion: "Letters from insurance companies requesting a medical report on some patient who is applying for insurance are worse than a nuisance." Very good! Again, "Insurance companies have no claim on 'charity treatment.' There is no reason why reports should be handled free of charge." Since the appearance of this diatribe our friend has solved his own difficulty by sending the requested information to the former patient to be transmitted by him, if after perusal he is so inclined, to the insurance company. An unfair and even at times inimical attitude toward all insurance companies has heretofore characterized some groups of hospital attaches. This point of view was developed after years of experience with all manner of insurance organizations and various types of insurance lawyers, adjusters and the like. Superintendents, record librarians, and internes have suffered great annoyance and often imposition from impudent and insistent representatives, particularly of accident and liability companies. Unfortunately, life insurance companies had to bear some of the criticism and hostility thus engendered. However, as far as life insurance companies are concerned this has all been changed since the reasonableness of their requests is apparent and all authority for giving out data relating to patients comes through patients themselves to physicians in attendance at institutions.

It is true that life insurance companies must still consider the "profit motive" in business along with the desire to serve human kind. However, when a person applies for life insurance he explicitly promises to furnish the company all necessary informa-

tion, medical, financial, or otherwise. This is part of the agreement entered into and is an essential requirement on the part of the insuring company in order that it may arrive at a sound satisfactory basis for fixing the premium in his individual case. It is obvious that both parties to the contract are supposed to profit by full and truthful information. If the applicant who has presumably employed and paid the physician, hospital, or clinic, to find out his trouble is willing to come clean with the insurance company surely the doctors should be willing to do their part when the request is authentic and is courteously presented. In fact it is an obligation due the former patient as well as a courtesy to the professional brother who presides over the medical department of the insurance company. Most insurance companies delicately tender a small honorarium to the physician to partially compensate him for his trouble in looking up and summarizing his record and cheerfully pay all institutional staffs reasonable fees for such service. Medical directors of insurance companies ask for no "charity", either for their companies or themselves, but they do reserve the right to decline your friend and patient, when for any reason vital medical information is not obtainable, or what is still more serious where misinformation and out and out misrepresentation are believed to exist. Much time and trouble would be saved if all insurance companies, at the time the application is signed, would have also signed printed slips requesting attending physicians to furnish information. Doctors to whom such requests are transmitted by medical departments of insurance companies ordinarily feel free to send their replies direct to the company when so requested. In exceptional cases it might be advisable to return the completed report to the applicant for his approval before sending it to the company. This course would save possible embarrassment to both physician and patient, since in case of unfavorable action by the insurance company the rejected applicant would at least know his physician had been fair.

The doctor as medical examiner is our next topic. There are very few physicians who have been practicing any length of time who have not made examinations for life insurance. Many begin when setting out

in practice and actually seek such appointments. Some early become dissatisfied with the inconvenience and often real sacrifice, entailed in making examinations, and as soon as their practices grow sufficiently drop out of it. Others become disgusted with insurance salesmen and their constant struggle to get bad risks accepted and, they refusing to compromise facts or connive with agents, give up examiner-ships. Such has been, in the past, a rather common experience. However several changes in this, the old order, have taken place. For example it has become common practice, of life insurance companies, to accept without medical examination persons between fifteen and forty-five for amounts up to \$2,500 or \$3,000. Actuarial experts seem to have demonstrated that this method of non-medical selection, when carefully carried out, pays. A tremendous amount of medical examining by physicians has thus been dispensed with.

A second factor in the new order has been the practice of many companies of having only two examiners in each locality, a chief and an alternate. Furthermore, medical directors who make appointments of medical examiners are no longer so much influenced by official or agency pressure but after careful investigation select the most reliable man available. It not infrequently happens that several companies, by accident or otherwise, appoint the same physician as chief examiner. In some larger towns doctors singly or in groups become interested and efficient in handling large numbers of life insurance medical examinations. It comes about that with increased volume of examinations, protection of the doctor from agency pressure and from friendly consideration of the applicant more remuneration for the doctor and hence better examinations for the company result. Life insurance examinations have well nigh developed into a highly specialized branch of medicine. To be sure we still have here and there the careless examiner who is slow to complete his examination report, who minimizes his friend applicant's slight rise in blood pressure, usually "catching" it at 10 to 20 points too low. We even have yet some of the "1020 and 120 over 80" examiners as they are known in home office circles. It pains the medi-

cal director to have to call his colleague's attention to the fact that in the past twelve cases examined ten have shown a urine gravity of 1020, while eight of the twelve have shown blood pressures exactly 120 over 80. The tactful suggestion is made that the doctor have his urinometer and blood pressure machine checked. The dilemma in which we have found ourselves in times past is illustrated by this actual occurrence. We asked our friend, who is medical director of one of our local companies, which doctor he employs as examiner in the town of Blank. He replied, "Well, Dr. A. is a 1020, 120 over 80 boy who makes some pretense of examining a risk while Dr. B. reports everything 100% but makes no examination whatever." Of course, this type of medical examiner, the doctor who accepts in good faith a fee for service to his brother doctor who presides over the medical department of an insurance company and who deliberately betrays the trust is, as has been said, fast disappearing. He is being replaced by careful selection on the part of medical directors of chiefs and alternates who are well paid because of volume of work for various companies and who thereby become impersonal and capable.

Last of all let us briefly look at the medical departments of life insurance companies and the medical directors. All of the high class life insurance companies have well organized medical departments headed up by a medical director and his associates. The perfect coordination of this with the other departments, so essential for purposes of life selection, also enables such companies with farseeing vision to carry on research, health conservation, educational propaganda and the like.

Their contributions to scientific medicine in the way of refinements of laboratory tests, public health education and welfare work with actual endowment of research funds, and, lastly, their statistical analyses of disease incidence and mortality are recognized as invaluable.

With regard to life conservation as contrasted with indemnification for loss, life insurance companies—whether we believe them actuated by philanthropic or mercenary motives—are following the example of companies underwriting property risks

such as fire, marine, etc. It is well known that "with some of the leading types of property insurance prevention of loss efforts have become the most important insurance activity of all." "The tremendous possibilities for good by way of the improvement of health and prolongation of life" are suggested by reports of the Life Extension Institute. Periodic health examinations, so insistently advocated by organized medicine, are being made by this institution for forty-three life companies free to policyholders; while many other companies offer health examinations with freedom of choice of physician by the policyholder. The data acquired in these examinations are usually confidential and not reported to the companies. It is said that 50% of the deaths—150,000—between thirty and sixty years could have been postponed. It is claimed that such examinations in these groups have reduced the mortality 50% below the expected. To be consistent or even to be alert and alive to the interests of the public and ourselves we doctors must not overlook these trends.

While clinical medicine is the basis of all life insurance underwriting there are many technical points, much different interpretation and new points of view to be acquired. In a spirit of awed humility the seasoned clinician, confronted with a medical directorship, goes to the medical department of the big life insurance companies and is taught fundamentals of underwriting by young laymen and then he sits at the feet of medical directors, who initiate him into some of the mysteries of the art. A few standard text books are recommended to help him over some rough spots but much experience with not a little trial and error come into play before judgment ceases to be fatally fallacious.

One of the most difficult things for medical directors to learn is to think of disease in terms of thousands or tens of thousands, of cases instead of isolated individuals. They must avoid impressions and stick to classes, groups, and percentages. The experience by which the medical department profits is not that of individual doctors nor even of individual life insurance companies but the sum total of all life insurance experience which is compiled and ready of reference with endless classifications and tab-

ulations of mortality. The medical director who goes even in rare instances contrary to combined experience, who on a "hunch" takes a chance against the dope, sooner or later finds a death claim on his desk which will cause a pang of remorse to him and his official associates when the cause of death is one which may have leered at him a few years before when he boldly approved the case.

His evaluation of risks is from such written reports as statements of applicant, family doctor, medical examiner, credit reporter, and previous insurance record. No place here for personal touch. He learns to analyze statements which, though they may be true, are always worded with a view to securing favorable consideration for the applicant. So seldom does he have presented "the truth, the whole truth and nothing but the truth." His is no easy task for it is his job to keep down his company's mortality while at the same time accepting all worthy business.

Satisfying ambitious officials who must have volume and premium income and at the same time keeping a low mortality calls for rare judgment and tact. His position is often comparable to that of a surgeon who finds his operative mortality distressingly high. The medical director, like his surgical colleague, analyzes his deaths and seeks out defects in his technique. He studies, travels and attends lectures and clinics which tend to broaden him and further train him for his special field. In the end, the medical director like many of his colleagues in other medical specialties gets his greatest satisfaction from the esteem of his associates and the realization of useful constructive work done in the service of unfortunate humanity.

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DOUGLAS L. CANNON, M. D.,
Managing Editor.

Subscribed and sworn to before me this 7th day of May, 1935. Cora Cogdell, Notary Public. My commission expires July 24, 1939.

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THE MOBILE MEETING AND THE ASSOCIATION'S NEWLY CHOSEN OFFICERS

Probably no other city in the State can play the part of perfect host as can Mobile; its history, its setting and the inborn graciousness and hospitality of its people all combine to insure for the visitor within its gates a degree of enjoyment hardly paralleled anywhere else. The doctors of the State appreciate to the fullest these well known facts and eagerly look forward to the Association's annual gathering in Mobile. The attendance this year was quite gratifying and may be interpreted as a beginning return of prosperity for our profession. The scientific program which had been carefully prepared by President Cunningham proved exceptionally interesting, and the contributions made by the guests from other states were of an high order; outstanding among which was that made by Dr. George Henry Semken of New York, the Jerome Cochran Lecturer, on neoplasms of the breast. It was much regretted that Dr. Arthur T. McCormack of Kentucky, who was scheduled as one of the principal speakers for the Wednesday evening public meeting, was unable to be present; however, it was a happy thought that crowded into the gap thus created such excellent "pinch-hitters" as our own Dr. Mohr of Mo-



CHARLES A. THIGPEN
Montgomery
President of the Association
1935-1936

bile and Dr. Semken of New York, who, together with Dr. Austin Hayden of Chicago, representing the American Medical Association, furnished for the large audience present an evening of entertainment and instruction not soon to be forgotten. The entertainment and social features for both the members and the ladies in attendance were many and all that could be desired; outstanding among which was the delightful journey to picturesque Dog River where the eye and palate were feasted well to the point of saturation.

The last day, Thursday, was largely devoted to business features—the receiving of the report of the Board of Censors serving in its three capacities and to the election of officers for the ensuing year. Among the more important things receiving favourable consideration at the hands of the Association were the following:

(a) Providing an honourarium of \$100 for the Jerome Cochran lecturer each year, in order to defray his expenses;

(b) Providing an amount not to exceed \$75 each, for the delegates from the Association to the annual meeting of the American Medical Association;

(c) Reduction in the present number of the personnel of the various standing committees and providing for the expenses of one annual meeting for each, when, in the opinion of the chairman, such meeting is deemed necessary;

(d) The approval by the Association of the expenditure of \$300 for financing a postgraduate course in pediatrics for the physicians of the State, to be sponsored jointly by the Association and the Children's Bureau in Washington;

(e) An amendment to the present ordinance regulating contract practice to enable physicians to work out uniform and ethical plans for hospitalisation of patients on a voluntary insurance basis.

In the selection of the officers to serve the Association for the ensuing year, nothing but complete unanimity of opinion prevailed. Every member seemed particularly happy in being given the privilege of casting a ballot which would elevate to the presidency one of the Association's oldest, most beloved and most distinguished members; one who throughout the years has, by precept and by example, laboured to maintain and elevate the ethical and scientific standards of our profession, Dr. Charles A. Thigpen, of Montgomery. All may feel that the destinies of the Association are secure in such experienced and trained hands. For Vice-President of the Southeastern Division, Dr. Charles P. Hayes, of Elba, an Active Counsellor and outstanding worker for years in the Association, was chosen without opposition. Dr. Hayes' high professional attainment and his interest in the organisation assure a sound leadership for this section of the State. To serve on the State Board of Censors, Drs. Caldwell and Gordon, whose five-year terms had expired, were returned to the Board; which action speaks for itself as to the satisfactory and commendable services they have rendered. Dr. M. Y. Dabney, of Birmingham, who formerly had served one term on the Board, was, by acclamation, chosen to fill the unexpired term of Dr. J. S. McLester, resigned. Dr. Dabney needs no introduction to our members; his interest in, and efforts

in behalf of organised medicine, are known to all and have been conspicuously reflected as a member of our State Board of Censors. To replace Dr. Thigpen, who had been elevated to the presidency, Dr. T. Brannon Hubbard, of Montgomery, was selected to fill this unexpired term. Dr. Hubbard, since his identification with the profession in 1912, has been a most active and loyal worker, within the organisation; and this fact, coupled with his professional and scientific attainments, assures to the Association a safe and sound adviser on this important Board.

The re-election by the Board of the present State Health Officer, Dr. J. N. Baker, was confirmed by the Association.

ANTITOXIN TREATMENT OF SCARLET FEVER

A good many years have elapsed since scarlet fever antitoxin was introduced, and the controversy as to what constitutes its proper use is still far from settled. In an endeavor to throw further light upon this subject, Lucchesi and Bowman¹ have made a detailed study of their experience with this antitoxin and reported their findings at the Cleveland session of the American Medical Association. Their report is based upon a series of 5,377 patients with scarlet fever at the Philadelphia Hospital for Contagious Diseases during the years 1927, 1928 and 1929, the first three years that the antitoxin was employed in that hospital.

They classified cases in which the temperature did not exceed 100 degrees F. by mouth as mild; those in which the temperature ranged from 100 degrees to 102.5 degrees as moderate; and those in which it exceeded 102.5 degrees as severe. Every patient was skin tested for sensitivity to this antitoxin, and all patients not hypersensitive received the serum. "Those found positive were treated symptomatically."

The investigators found that antitoxin shortens the febrile stage of the disease. This decrease was slight in the middle and moderate groups, but there was a substantial reduction in the severe group. It was

¹Lucchesi, Pascal F., and Bowman, James E.: Antitoxin versus no antitoxin in scarlet fever, J. A. M. A. 103: 1049 (Oct. 6), 1934.

definitely noted that the incidence of complications was less in the serum treated patients, especially among those who had the more severe forms of the disease. "The death rate in the 3,045 cases in which antitoxin was given was 0.85 per cent (twenty-six), while in the 2,332 cases in which serum was not given the death rate was 0.43 per cent (ten). A greater death rate in the group in which serum was given may be explained by the treatment of a larger number of more critically ill patients in this group, 30 per cent of whom died within twenty-four hours after the admission to this hospital. There were no deaths from anaphylaxis." Serum reactions occurred in 36.3 per cent of the patients treated with antitoxin, and the use of ephedrine compounds had only a slight effect in

the prevention of serum disease. The authors state that "the high frequency of fairly severe serum reactions that followed the use of scarlet fever antitoxin in the early days of its inception is perhaps the chief reason why it is not in more general use today." They go on to say that the highly concentrated and refined antitoxin of today has practically eliminated the danger of severe serum reactions.

Lucchesi and Bowman conclude that "antitoxin is indicated in the moderate and severe forms of scarlet fever." This conclusion, based upon thousands of cases over a period of years, should carry much weight. The work of the Philadelphia investigators should make physicians more prone to administer the antitoxin promptly in all but the milder types of scarlet fever.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

WHAT OF THE FUTURE OF ALABAMA'S HEALTH SYSTEM?

By

C. A. Thigpen, M. D., President
Medical Association, State of Alabama
Montgomery

Over a period of 45 years I have been intimately and actively identified with the medical profession of this State and with the interests and activities which the entire profession has stood for and has labored to promote for the good of the people of our State. Outstanding among these activities has been the direction and administration of the State's public health system; a responsibility which has been delegated to the organized profession of no other state in the Union. How well our profession has met and discharged this responsibility, the record may be permitted to speak for itself. Suffice it to say that the smoothness and efficiency of its working machinery have attracted students of public health from the world over to learn, first-hand, the details of its operation. This unique system has been looked upon by us as organized medicine's gift to Alabama, and, throughout the years, we have zealously and carefully nur-

tured it to its present high state of usefulness.

Our State Health Officer, at the recent annual meeting in Mobile, outlined to the Association in his annual report, the difficulties and vicissitudes through which the health department has passed because of the State's dreadful financial plight and expressed great hope that the damage done, because of the drastic curtailment of his funds, might gradually be repaired. He based this hope upon the grounds that, each month, the amounts actually made available for health work were showing substantial increase.

And yet, in the face of these encouraging facts, that the State's revenues continue to show improvement, the Recess Committee on Finance and Taxation, on the first day of the reconvening of the Legislature, submitted its recommendations for appropriations for the various departments of state for the ensuing quadrennium. In this Committee's report some departments were substantially stepped up; some were not altered, while the appropriation to the health department was further cut (it having already been reduced by 42%) by \$125,000 annually, leav-

ing but \$275,000 for all health activities, including the State subsidy to counties for local health work.

The following brief statement from the State Health Officer concisely sets forth the facts:

"How important is Alabama's health? Disraeli, England's far-seeing Prime Minister of more than a century ago, once uttered, 'The public health is the foundation stone upon which reposes the strength of a nation and the happiness of its people.'"

What story do you feel these figures tell for Alabama's health?

In 1917 typhoid fever killed in Alabama 989 people; in 1934 it killed 131 people.

In 1917 tuberculosis killed 2,914; in 1934 it killed 1,734.

In 1917 pellagra killed 1,073; in 1934 it killed 303.

In 1917 malaria killed 530; in 1934 it killed 303.

From the very beginning of health work in 1875, the succeeding legislatures of this State have shown commendable statesmanship in making liberal provisions, within the State's capacity, for the growth and development of this necessary activity. The first extra session of the legislature, held in 1932, faced with a tremendous shrinkage of the State's revenues, and being forced to curtail all departmental activities, cut the appropriations for health by 42%. This reduction, at this time, was imperative and the health department's budget was revamped accordingly. However, so great was the falling off of revenues that for the fiscal year 1933-1934, only \$287,000 of this appropriation actually became available; which circumstance forced the total suspension of many important health activities. During the present fiscal year, 1934-1935, the State's revenues have improved to an extent that the Governor is hopeful that each department will receive, for the remainder of the year, its full quota of present appropriations.

Despite this encouraging showing, on Tuesday, the Recess Committee on Finance and Taxation, in House Bill 249, submitted to the House its recommendations for appropriations to the several departments of state for the next quadrennium. A perusal of this reveals that the appropriation for health work, including the state subsidy to the counties for their local health work, has been further reduced by \$125,000 annually, leaving but \$275,000. This represents a cut of 60% from the 1932 appropriation for health work in this State; an amount totally and utterly inadequate.

Is this what the entire membership of this legislature wants and does it reflect the wishes of our people?"

The question now arises: What should this Association as the legally constituted State Board of Health do?

Clearly in this crisis we should rally to the support of our executive officer—the State Health Officer—giving him every support possible. Every member can inter-

est himself in pointing out to his senator or representative the absolute necessity of providing sufficient funds for maintaining an efficient health service for the State. This Association, because of its legal responsibilities, has a right to request and expect this. If the legislature is unwilling to pay heed to the advice and reasonable requests suggested by the agency created by law to shoulder this responsibility then, in my opinion, as your President, the time has come for this Association to relinquish this responsibility placed upon it by law.

GROUP HOSPITAL INSURANCE

By

J. N. Baker, M. D., Secretary
State Board of Censors
Montgomery

The feeling has become almost universally prevalent among the members of the medical profession, not only in Alabama, but throughout the country, that physicians should actively interest themselves in working out plans for voluntary group hospital insurance to meet the hospital needs of a large group of our population which is seeking to find a method of more even and equable distribution for the cost of adequate hospital services. Many schemes and many agencies, as a consequence, have sprung into existence, motivated by a spirit of commercialism rather than by a desire to serve. Most of such plans give little or no heed to the incorporation of certain basic and ethical principles which all physicians feel are quite essential for adequate service, one of the most important of which is the separation of professional service from purely hospital care.

The present ordinance of the Association relating to contract practice as it pertains to medical practice in hospitals reads as follows:

Section 2. That a physician shall not, without violating the ethics of the profession, contract to render the following service:

Subsection 1. To perform medical or surgical service for private individuals, groups of individuals, lists of individuals, or for any society, lodge, club, or in what is commonly denominated a list hospital, or a hospital which secures its patients by unfair competition or unfair methods.

Subsection 2. To perform medical or surgical service in a hospital or clinic which secures its pa-

tients through solicitation, regardless of the manner or agency by which such solicitation is made.

The Committee on Legislation and Medical Economics (now changed to the Committee on Public Relations), feeling that this present ordinance needed to be modified and clarified in certain particulars in order to meet changing conditions, incorporated into its report the following recommendation:

Whereas, The present ordinance of the Medical Association, State of Alabama, looks with disfavor and probably prohibits hospital insurance; and

Whereas, The emergency of economic conditions requires and demands a readjustment and a compromise on principles that were tenable in years past; and

Whereas, There must never be an acceptance of combined hospital and medical services under any plan,

Therefore Be It Resolved by the Medical Association of the State of Alabama:

1. That hospital insurance that deals exclusively and only with the matter of hospitalization of the sick would be considered ethical,

2. That any form of hospital insurance adopted by the hospitals of Alabama must be equitable to all and each hospital in the State,

3. That hospital insurance under such guarantee shall be approved by the said Association, and

4. That any and all such plans for hospital insurance that are formulated by any one or group of hospitals, that said plan of insurance be submitted to the Board of Censors of the Medical Association of the State of Alabama for approval.

"The Board is fully aware of the acute need for working out some fair and ethical plan of hospitalisation which will distribute more evenly the cost of such hospitalisation for a large section of our population and is in hearty accord with the sentiments expressed in this resolution. In order to accomplish such purpose the Board feels that the present ordinance of this Association governing contract practice should be changed in certain particulars and that there should be added thereto an amendment dealing specifically with group hospital insurance. It, therefore, recommends that Subsection 2 of Section 2 of the ordinance dealing with contract practice be stricken out and that the section be made to read as follows:

That a physician shall not, without violating the ethics of the profession, contract to perform medical or surgical service in a hospital or clinic

with hospital service which does not conform to the ordinance of this Association now regulating group hospital insurance or which may hereafter be adopted by this Association.

The Board further recommends the adding to the present section of the ordinance dealing with contract practice the following amendment:

Be It Ordained By The Medical Association of the State of Alabama:

That any plan for providing hospital services on the insurance basis which deals exclusively and only with the hospitalization of the sick will be considered ethical, provided that the contract entered into between the institution and the patient shall be uniform, in every phase, throughout the State, and shall have the approval of the County Board of Censors and of the State Board of Censors."¹

This report was, after discussion on the part of several members, unanimously adopted by the Association.

Apropos of the foregoing, there is subjoined a discussion [Editorial, J. A. M. A. 104: 1333-1334 (April 13) 1935] of the Oakland County, Mich., Medical Emergency Relief Plan, that should prove of interest to the members of the Association.

OAKLAND COUNTY, MICH., MEDICAL EMERGENCY RELIEF

The cooperation of physicians, dentists, nurses and druggists in the County Emergency Welfare Administration in Oakland County, Mich., has resulted in a system of medical care for relief clients so comprehensive and satisfactory to all served that its description may be helpful to other localities. The plan is based on a faithful adherence to the intent as well as to the wording of FERA Rules and Regulations No. 7, in the preparation of which, it will be remembered, the American Medical Association participated. A "medical manual" has been issued, containing a description of the plan, all the blanks used, and standard instructions for all those concerned. In the introduction the medical director states that "the reason why we feel that this plan is successful thus far is the utter lack or absence of complaints from the welfare clients, and the universal approval of physicians and dentists."

Among the principles set forth as necessary to "be considered before any medical plan will function properly" are free choice of physician, cooperation of the county medical society, prompt payment for services rendered, no dictation of methods

1. From the report of the State Board of Censors, submitted to the Association in annual session, Mobile, April 18, 1935.

of treatment by laymen, and a medical advisory committee that can and will discipline the members of the profession more effectively than others outside the profession.

A characteristic of this plan, which is a deviation from the practice common elsewhere in emergency relief, is that any person who presents to any physician a card stating that he is on relief is immediately given the medical care needed. The physician reports the service furnished within seven days and receives payment usually within thirty days. This procedure places more responsibility on the physician and secures quicker action than when medical service must always follow a social service investigation. It also does away with any possible influence by a social service worker in the selection of a physician.

The spirit of the understanding is expressed in the statement that "social problems are one thing and medical problems another, and it would seem that by tending strictly to their own field both groups would be fairly well occupied during such times as these."

The medical work is under the direct supervision of a medical director who is a physician. It is made clear that the medical director "should serve in an administrative capacity entirely. It should not be his duty to dictate what diagnosis is made by the family physician or to criticize in any manner the type of treatment without first consulting the advisory committee appointed by the county medical society. In other words, he should refrain from medical dictatorship."

All disputes as to medical matters go before the medical advisory committee of the county medical society. There are special regulations to prevent imposition by clients who demand excessive medical service.

The fee schedule, which "is intended as a guide only," is about one half of the minimum fees usually charged in the community. All drugs must be prescribed by the physician and must be taken from the U. S. P. or N. F. unless special authorization is granted. Except in case of emergency, serious operations require consultation and special authorization. The arrangements as to dental care are practically the same as those for medical service. Nursing, surgical appliances, glasses, special diets and other things considered necessary by the attending physician are provided, also after special authorization.

The cost of the plan has been less than under previous methods of giving relief. In 1934 a total "gross case load" of 15,548 families was given medical care. This case load varied from 5,983 in June to 10,566 in December. The average cost for medical service for 1934 per family per month was \$0.9523 and the average cost per person was \$0.2506. The total payments to physicians for the year were \$89,729.74 and the total cost for all kinds of medical, dental, nursing and other service, excluding drugs and glasses, for which the audit is not yet complete, was \$116,881.06. Laboratory service was furnished by the county hospital without charge. A letter signed by the board of directors of the Oakland County Medical Society

says "We feel that the administration of medical poor relief in Oakland County has come as close to approximating the ideal as it is possible to come in the first year of any program."

BUREAU MEDICINE

By

G. H. Fonde, M. D.
Mobile, Alabama

Estimate has been made by some prominent medical authorities that ninety per cent of the sick should be attended in their places of residence, while ten per cent require institutional care. Thus it will be seen that the services of a general practitioner, as the family physician, are all that is needed in nine out of ten cases; and also that the general practitioner has the advantage of seeing patients in the early stages of illness and that his services can be better afforded by many of the low income group.

The medical profession, we are sure, would be benefited by a better business system. There is no justification, however, in the demand to incorporate the strictly professional medical service with the incidental costs, such as board, lodging, nursing, attendant and laboratory service, not necessarily by licensed and fully qualified physicians. The leveling of the expense, for physicians' fees, is not the point of objection to the bureau system. The objection is in the administrative dominance, especially if the control be non-medical. Doctors will always object to any requirements which would subordinate their professional services to any business filing index or other bureaucratic measures.

Any discussion as to systems of health insurance, with their well-known defects, seems to justify the request that the Senate Committee on Education and Labor make a full and complete investigation in order to determine the best and most effective kind of health insurance applicable throughout the United States. A most careful and thorough inquiry into the relative merits and demerits of private practice and of government medical agencies, such as the Veterans' Bureau, should be made. Only in this way is it believed that the waste, delay and inefficiency of the bureaus can be fully brought to light. In all bureau services, the writer can testify that many pa-

tients have preferred to waive their rights in these services in order to be treated by private physicians, even though it was necessary for the patients themselves to pay the bills.

Even though their intentions may be of the best, those who threaten the progress of medicine should be reminded that the rational school of medicine has contributed more to human welfare than has any other

department of human endeavor. This boon has come about mainly through educational work and is proved by the rank and file of the profession in the homes and in trusted relationship with the people. The generosity of the profession to the poor stands equally unchallenged, and none of these things can be claimed, if properly investigated, under the best bureau service already established in this country.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

CO-OPERATION BETWEEN OFFICIAL AND NON-OFFICIAL AGENCIES AND THE MEDICAL PROFESSION

Idealists and workers in public health have long been suggesting the need for greater co-operation between the medical profession, official and non-official agencies. Theory and practice are sometimes as widely separated as the poles. Yet the story of how these three groups worked together like a well fitted glove to the hand may be worth telling.

During the latter part of 1934, it was realized that something should be done to reduce diphtheria in Alabama, since there was occurring much more of this disease than should have been the case. At that time the American Red Cross was quietly casting about for some project to engage in that would be beneficial to a community and, at the same time, offer opportunity for co-ordinated effort on the part of Red Cross nurses, the medical profession and official health departments. An anti-diphtheria program in one or more unorganized counties seemed suitable and appropriate for such an experiment.

It was decided that the Red Cross, through the central bureau, would pay the salary and travelling expenses of a trained public health nurse. Guidance, supervision and the operating equipment would be supplied by the Health Department. The program began without delay in one county, but due to the sudden accidental illness of the nurse the work was held up for some time. Since the original county had been

almost completely worked, it was decided to attempt the program in a new county. This was begun around the middle of February, 1935.

The first week would be the mirror that would reflect the end results. Primary contact, after Red Cross organization procedures, was made with the medical profession to work out plans of operation. It was decided to charge a small fee for those who could pay for the treatment, but no charge was to be made for indigents. The fee was to be from five cents up to fifty cents, but fifty cents was to be the regular price. Each doctor was to be assigned at a definite time for a definite clinic.

A list of suggestions were given to the nurse in order to familiarize and popularize the general public with the campaign. The visual suggestions were window displays consisting of a sick room, toxoid, antitoxin and poster displays. Stickers stating "Diphtheria is Preventable" were to be used on automobile and store windows, announcements and "write-ups" were to be carried in the newspapers during the program. Where possible, bill poster boards were to be utilized to advertise the campaign, and speeches were to be made to all luncheon clubs, women's clubs and P. T. A.'s. Active cooperation was to be asked of the superintendent of education, principals and teachers in order to inaugurate competitive programs between classes in each school and between schools. Each class or school whose pre-school roster showed 100% protection against diphtheria was to be given a prize.

The project was begun in Hale County, having a population of 25,000; 6,000 whites and 19,000 negroes. During the campaign

2,570 children were immunized at 75 clinics. This means that over 50% of the child population has been immunized against diphtheria. 287 of these were amongst white children and 2,283 amongst negro children. 1,382, or 53.7%, were of pre-school age, and 1,188, or 46.3%, of school age. \$32.22, three dozen eggs and one gallon of syrup were collected at the clinics. There were approximately 100 pay patients.

Excerpts from the nurse's letter to the Health Department are worthy of quoting verbatim. "The doctors are remarkable in this county. They seem to be enjoying their work in assisting with the immunization project. I have never had better co-operation anywhere. Not a single doctor has failed to show up at his appointment up to this time and that, in itself, is remarkable for a general practitioner. . . . I did not fully appreciate what they had promised to do until I got out on some of the side roads after a rain. . . . The weather has been very unfavorable."

W. H. Y. S.

BUREAU OF LABORATORIES

James G. McAlpine, Ph.D., Director

POST-VACCINAL PARALYSIS

In the last issue of this Journal attention was directed to the fact that there is an element of danger in the administration of rabies treatments. Although the Semple method, which has been used for a number of years by the State Department of Health, seems to give a smaller percentage of cases of post-vaccinal paralysis than the classic Pasteur treatment, accidents have happened with this product. Furthermore, the experiences of other countries have shown that there may be freedom from trouble for a long time and then a series of severe or fatal cases may occur.

During 1934, 5,514 Semple rabies treatments were distributed in Alabama and two cases diagnosed as post-vaccinal paralysis were reported. No records of mild accidents are on file, but it is probable that some may have occurred. Through the courtesy of Dr. George A. Denison case histories are available on these two cases. They are summarized below.

Case A. White, male, age 18. Treated in May, 1934 with Semple vaccine supplied by

State Department of Health. Patient had not been bitten, but had handled a rabid dog. There were no abrasions or cuts on his hands of any significance. Complications developed on the fourth day after the completion of the treatment.

This patient, previously well and physically active, was taken suddenly ill with fever, pain in the lower thoracic region of the back, and vomiting. Within 12-18 hours the pulse had fallen from 130 to 72 and there was a very rigid neck. At this time both lower extremities, bladder and bowel, were completely paralyzed. This paralysis was not preceded by any pain or hyperesthesia. Superficial and tendon reflexes were entirely absent. Kernig negative. There was no sensory disturbance. The spinal fluid was not under pressure and showed 300 cells, all lymphocytes, no organisms.

There was a question whether this was Landry's ascending paralysis, poliomyelitis or vaccine paralysis. Two of the three doctors who examined the case pronounced it vaccine paralysis of the Landry type while the other remained unsettled about his diagnosis.

Within several days the paralysis had extended unequally to both arms, the right arm being almost completely paralyzed. The abdominal muscles were flaccid and paralyzed. The patient required catheterization, the bowels were involuntary.

This patient was last seen nine months following the onset. There was no residual paralysis of the arms or abdominal muscles. Both the lower extremities were completely paralyzed, all muscles showing considerable atrophy. Instead of retention of urine there was urinary incontinence. The bowels moved with difficulty and usually only after enemas.

Case B. White, male, age 4. This child had been bitten on the hand by a suspicious cat which strayed away and could not be found. Treated in October, 1934, with Semple vaccine supplied by State Department of Health. On the 13th day of treatment the child complained of pains and cramping in both legs. Within about 12 hours there developed a complete paralysis of both legs and, (according to the mother) a partial paralysis of the forearms limiting movements at the elbows. There was no

fever, sore throat, or symptoms other than pain in both lower extremities.

This child was seen one week after the onset and at that time there was no limitation in movements of both upper extremities. There was some slight movement of the thighs (adductors) but other than this both lower extremities were completely paralyzed, flaccid and all tendon reflexes were absent. Babinski was negative. The bowels and bladder were not involved. There was no pain and no sensory disturbance.

This child was visited again on March 26, 1935, five months after the onset. There was a complete toe and foot drop (bilateral). Walking was accomplished with difficulty and with a high stepping gait to prevent dragging of the toes. No other paralysis was evident. There was no gross muscular atrophy.

This may have been a case of poliomyelitis though there is no way to satisfactorily rule out vaccine paralysis. Clinical data are very incomplete because of the indifference of the parents and their failure to obtain medical care.

The cases described above give some idea of the type of accident which may occur following the administration of Semple vaccine. Rabies has markedly increased in Alabama and concomitantly there has been a wider use of the vaccine. The greater the number of treatments given the higher are the chances for the development of post-vaccinal paralysis.

Therefore, it must be emphasized that the indiscriminate use of rabies vaccine is fraught with danger. Each case should be considered as an entity; the danger of developing rabies due to the exposure should be weighed carefully against the possibility of accidents due to the injection of rabies vaccine.

BUREAU OF PREVENTABLE DISEASE CONTROL

D. G. Gill, M.D., Director

IMPORTANCE OF REPORTING COMMUNICABLE DISEASES

Knowledge of any disease is based on the collection of statistics concerning that particular disease. The collection of the sta-

tistical data are given systematically and of the data and the acquisition is dependent on the giving of the data. Unless the statistical data are given systematically and regularly by the physicians then it is impossible to gain complete knowledge of any disease. Diseases must be studied over a period of many years. It is impossible to forecast or prognosticate what a particular disease will do at a definite time unless we know something of that disease's past performances. Is it a disease that occurs in cycles, in waves of irregularity or regularity? What percentage of cases die? Is it the same with each epidemic? Is the disease becoming milder or more severe? With adequate, accurate reporting of communicable diseases these questions and many other ones will be answered.

We say that typhoid fever has declined materially in this century. If typhoid fever had never been reported it would be impossible to hazard anything but a supposition at the present time. Hospitals require records of all patients. Why? In order to learn something about what has been diagnosed, what has been done, and how it was done. Different businesses require records to insure adequate operation. Yet we physicians often feel that it is futile and useless to report communicable diseases. But it is no more futile and useless than it is for any business to give up its statistics, or for the bank to fail to give you your deposits and withdrawals.

The knowledge that we gain from the collection of disease statistics is great. It has given us methods of control of spread. It has given us ideas about tracing the source, what time of year the disease flares up, how long the flare-up lasts, when it can be expected again, what particular age groups are affected and what sex. As an example of what reporting cases has meant in discovering the method of spread of the disease, the citation of Brill's disease is worthwhile. It was found that over sixty per cent of the cases were in males employed where food or grain was handled. Yet only twenty per cent of the adult male population was gainfully employed in these occupations. This one idea then gave a clue to the method of spread. To cite another example, a small local epidemic of typhoid fever breaks out. On the receiving of the

reports the health authorities make an investigation and prevent a major epidemic developing from that small local epidemic. The typhoid epidemic that occurred a few years ago simultaneously in three of the largest cities in the United States was found to be due to infected oysters which had all come from one dealer. The knowledge of the existence of these epidemics had been given by reporting.

Communicable diseases in Alabama are meagerly reported. That more cases occur than are reported is shown by the relationship of cases to deaths. Alabama is one of the eighteen remaining states which has not been able, due to incomplete reporting, to enter the United States Morbidity Reporting Area. Alabama could enter this area if each physician would report his communicable diseases.

THE PRINCIPLES OF TREATMENT IN EARLY SYPHILIS

(Continued from April Issue)

1. Give bismuth and arsphenamine together at least one-third to one-half the time.

2. Prolonging the treatment of bismuth, as well as its early use, seems to prevent relapse and progression in the vital structures.

3. Serological tests during the first year are misleading. Distrust early reversals of the Wassermann within eight to twelve weeks of treatment. Weak positives forewarn of relapse. Continue the treatment according to schedule. It may be disastrous to stop treatment even on repeated negative tests of less than a year's duration.

4. Rest intervals and "abortive" courses are the chief causes of Wassermann fastness.

5. The time intervals between treatment are of major importance in early syphilis. Irregularity leads to relapse, fixed positiveness, and failure. This should be impressed on the patient.

6. The danger signs of a syphilis that is relapsing are: (a) persistent positive serological tests beyond six months, (b) weak or partial positives appearing in the course of a series of negatives.

7. Do not take the first blood test too soon if you are in doubt as to the continuance of the patient to treatment. He may fail to return for treatment after the negative blood report.

(To be continued in the June Issue)

BUREAU OF SANITATION

G. H. Hazlehurst
Director

VENTILATION AND AIR CONDITIONING

The value of an abundance of fresh air as obtained by out-of-door play, recreation or work is recognized by everybody. The achievement of similar indoor conditions, so far as an abundance of "circulating fresh air", is concerned, has been given much thought and study. Committees on ventilation and air conditioning, etc., have made thorough studies and have arrived at definite conclusions and recommendations in this regard.

A report on "Ventilation and Atmosphere Pollution" made by a committee, to the Industrial Hygiene Section of the American Public Health Association, is given in the 1934-1935 American Public Health Association Year Book. The above committee has been organized for three years, having been appointed by the Council of the Section on Industrial Hygiene in 1931. In summary a total of 62 questions on ventilation and atmosphere pollution have been propounded and answers arrived at by the committee since its organization. Thirty-six of these questions had answers of seeming unanimous agreement. Among these questions and answers the following pertinent facts were confirmed by the committee:

1. That the purpose of air-conditioning is to produce and maintain an atmospheric environment conducive to comfort, health and personal efficiency.

2. That the best practical means for determining whether an atmosphere is properly conditioned is (1) by determining the temperature, humidity and air movement and where indicated, air purity with regard to dusts, fumes, smoke, vapors, gases, bacteria, and perhaps odors and (2) physiologically by the primary sense and room comfort sensations.

No definite conclusion was drawn by the committee as to the proper air temperature and humidity. Quoting from the Association's Year Book, "All five members were against limiting humidity to as narrow confines as 30-60 per cent relative humidity. Two were against including humidity in an obligatory code, while a third would make certain that desired temperatures could be had when neither 'humidification' or 'dehumidification' is required."

In this regard and in referring to standards for a correct ventilation the Ohio Health News says, "These rather ideal conditions one may obtain in his living room easier than in a school room. The chief spokesman is a thermometer which ordinarily should not be allowed to record above 70° and which should tend toward 68° more often than upwards, 70°. Sixty-eight degrees is called the critical temperature for health. Respiratory disease increases at temperatures above or below, and more especially with temperatures above that level."

The importance of ventilation and air conditioning is coming more and more to the front. Those who have studied the problem most, believe in general, that new state laws should be created to the effect that matters pertaining to ventilation and air conditioning should be referred to an administrative department, board of building standards, or other duly constituted authority with full power to determine standards and procedures. T. H. M.

BUREAU OF VITAL STATISTICS

L. V. Phelps, Director

REGISTRATION OF VITAL STATISTICS

Alabama was admitted to the Death Registration Area in 1925 and 1927 to the Birth Registration Area. A state is not admitted to either of these areas until ninety per cent of the deaths or births are reported, according to a check on registration by the U. S. Census Bureau.

The benefits of registering births and deaths must be obvious to all members of the medical profession. Birth registration is essential for establishing proof of citizenship and of identity, for settling definitely questions of right to enjoy civil and property rights where questions of age and

descent are involved, the right to attend school, to enter employment, to marry, to receive passports, to serve in the civil and military arms of government, to enjoy bequests and the proceeds of insurance. All of these are more or less dependent upon adequate proof of birth and parentage.

Death certificates have an equally important bearing upon civil rights of dependents and descendants of the deceased. Possibly the most important use of birth and death certificates is that made by public health officials.

It is of paramount importance that both birth and death certificates be promptly, completely and accurately made out. The physician is responsible for making out the medical certificate of death. By promptly filling in the cause of death, in accordance with the International Classification of Causes of Death, he can aid in securing prompt and accurate registration of deaths.

The physician who attends a birth is required to report the fact on a birth certificate to the local registrar of vital statistics of the district in which the birth occurred. If the name or address of the local registrar is unknown to him, the County Health Officer or the State Registrar of Vital Statistics will furnish him with a list of the names and addresses of local registrars in his territory. Birth certificates should be sent to the local registrar immediately upon completion by the physician and not be allowed to accumulate in his office, thereby causing a delay in registration.

A recent study of birth and death certificates shows that there is a serious delay in the reporting of both births and deaths, especially of the latter. Physicians are urged, therefore, to fill out all certificates as completely and accurately as possible and to file them promptly with the local registrar of vital statistics.

Scarlet Fever Infection—There is excellent support for the belief that in general scarlet fever is a disease largely transmitted by carriers rather than by cases. This, however, is not true of familial scarlet fever, because as many secondary cases were found to arise from exposure to the acute infection as from contact with healthy or convalescent carriers.

Upper respiratory infections including tonsillitis are relatively prevalent among persons recently exposed to scarlet fever.—Gordon, et al., *Am. J. Pub. Health*, May '35.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	February	March	Estimated Expectancy March
Typhoid	15	11	29
Typhus	2	7	2
Malaria	109	201	61
Smallpox	3	4	45
Measles	1807	2142	886
Scarlet fever	66	54	76
Whooping cough	155	247	140
Diphtheria	67	53	86
Influenza	7473	2477	705
Mumps	270	135	199
Poliomyelitis	3	1	2
Encephalitis	0	4	4
Chickenpox	350	365	268
Tetanus	0	4	3
Tuberculosis	311	310	413
Pellagra	18	41	29
Meningitis	9	15	6
Pneumonia	941	832	521
Syphilis (private cases)	305	462	159
Chancroid (private cases)	4	7	8
Gonorrhea (private cases)	181	316	205
Ophthalmia neonatorum	0	0	2
Trachoma	0	2	0
Tularemia	1	3	1
Undulant fever	1	4	1
Dengue	0	0	0
Amebic dysentery	2	2	0
Rabies—Human cases	1	0	0
Positive animal heads	95	114	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

Book Abstracts and Reviews

Modern Motherhood, A Book of Information on Complete Maternity Care: Prenatal Delivery. After Care. By Claude Edwin Heaton, M. D., F. A. C. S. With an introduction by Hazel Corbin, Director of the Maternity Center Association. Farrar and Rhinehart, Inc., publishers. New York City. 241 pages. Cloth. 1935. Price \$2.00.

"An attempt is made in this book to give a frank presentation of our present knowledge of childbirth to lay readers, particularly parents." (Preface.)

The first sixty-five pages of the book are devoted to a description of pregnancy. This includes a rather thorough description of the various symptoms of pregnancy and their significance. A description of almost perfect prenatal care is given with the reasons for the various procedures advocated.

The second section is devoted to childbirth and care of the newborn. A rather detailed description of the various types of anesthesia used during delivery is given. The author describes the three stages of labor and tells what takes place during each stage.

A rather liberal section is devoted to human reproduction. This deals with an elementary description of the reproductive process. Small chapters are devoted to displacement of the uterus, cancer of the cervix, and certain other gynecologic conditions that are related to obstetrics.

The closing section is devoted to general advice for the expectant parent with special emphasis on obtaining adequate maternity care. The expectant mother is told how to choose her doctor. The doctor in the community who has had the best training in obstetrics is advised but "if the family doctor is

brought into a good maternity hospital supervised by obstetricians, both he and his patients benefit." In the selection of her hospital the standards of the American College of Surgeons for hospitals taking obstetric patients is given.

Doctor Heaton has written a very nice work which should be a big help to the intelligent parent. It might serve as the source of considerable discomfort, however, to a nervous patient and her doctor. It is not likely that any obstetrician is going to agree with everything another obstetrician subscribes to. It would have been a great deal better to have been not quite so positive in a good many instances.

L. L. H.

The Nervous Patient, A Frontier of Internal Medicine, by Charles Phillips Emerson, M. D., Research Professor of Medicine, Indiana University, Indianapolis. 453 pages, no illustrations. J. P. Lippincott Company, publishers. Philadelphia and London. Cloth. 1935. Price \$4.00 net.

One should not be misled by the name of this book into thinking that it is intended for the neurologist and psychiatrist. It is written primarily for the practicing physician who is consulted by a large proportion of patients with vague and indefinite complaints which are not readily diagnosed and which are grouped under the term of nervousness or neurasthenia. Its pages reflect a broad outlook, a detailed knowledge of disease and a keen clinical sense on the part of its author. When one has read this volume, a disease ceases to be a static picture and becomes, instead, a many-sided disturbance in the individual's well-being, influenced by heredity, the trauma of birth, illnesses and injuries of childhood, and the errors of diet and hygiene and modified by the psychic shock of pain, sorrow, disappointments, struggles and maladjustments. It is a book that is worth reading twice—once in order to appreciate the general theme and again for the thousands of valuable details, of terse clinical descriptions and of important points of differential diagnosis. The reader will be stimulated to read more the subjects described and he will find a valuable guide in the bibliography. The reviewer feels that this is a book of rare value for which no praise is too great.

C. K. W.

Names of Surgical Operations. Compiled and arranged by the Western Surgical Association through its special committee. Edited by Carl E. Black, A. M., M. D., Jacksonville, Illinois. Bruce Publishing Company, St. Paul, Minn. 1935. Cloth. 101 pages. Price \$3.00.

The special committee of the Western Surgical Association has made a sincere effort to clarify the rather formidable maze which had in recent years grown up around the subject of surgical operations. They have used Dorland's Dictionary as a basis and they furnish lists of surgical operations to a number of surgeons throughout the country. By this process of elimination they have reduced the names of surgical operations from 3,313 to 743. Necessarily the names of individuals have been omitted although provision is made for inclusion in certain instances of classical procedures. Reference is made to certain errors in philology but common usage is given preference as it is in Dorland's Dictionary. The names of the operations are taken up

by anatomical regions and the list seems to be very inclusive.

A plea is made to surgeons and hospitals alike to use this list as a basis for their records in the hope that surgical literature may be simplified and made more intelligible to every medical man wherever his location in this country may be. It is a very commendable work and one deserving of our support.

J. L. B.

Martini's Principles and Practice of Physical Diagnosis. Edited by Robert F. Loeb, M. D., Associate Professor of Medicine, College of Physicians and Surgeons, Columbia University, and Presbyterian Hospital, New York City. From the authorized translation by George J. Farber, M. D. J. B. Lippincott Company, publishers. Philadelphia. 212 pages with 30 illustrations. 1935. Cloth. Price \$2.00 net.

Intended primarily for the medical student, this little book contains a vivid description of the various methods of physical examination of the chest and abdomen. It deals entirely with the methods of inspection, palpation and auscultation. No attempt is made to describe the special methods for examining the nervous system, the osseous and muscular systems, the special senses or the reproductive organs. It serves well its intended purpose of presenting a brief description of these fundamental diagnostic methods for the instruction of the medical student.

The practitioner of medicine might gain practical information from the chapter on "Observation of the Patient" and from the excellent summaries of the physical and x-ray signs of the various diseases of the chest and he will find a practical guide for his own histories and physical examinations that might be used daily in his practice.

C. K. W.

Truth About Medicines

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Aminoacetic Acid.—Observations of a number of workers have shown aminoacetic acid (glycocoll, glycine) to exert a significant effect on urinary and muscle creatine in patients the victims of myasthenia gravis, and progressive or pseudo-hypertrophic muscular dystrophy. Coincident with the altered creatine metabolism definite, and in many instances remarkable, degrees of clinical improvement or amelioration of symptoms have been reported. While some observations would indicate that aminoacetic acid may exert an action in all forms of fatigue, this work has not been critically controlled.

Aminoacetic Acid-Pfanstiehl.—A brand of aminoacetic acid—N. N. R. Pfanstiehl Chemical Co., Waukegan, Ill.

Capsules Ortal Sodium, 5 grains (0.3 Gm.)—Each capsule contains Ortal Sodium (The Journal, March 24, 1934, p. 928) 5 grains. Parke, Davis & Co., Detroit, Mich. (J. A. M. A. April 6, 1935, p. 1241)

PROPAGANDA FOR REFORM

Aminoacetic Acid.—The Council on Pharmacy and Chemistry reports that from the many studies reported on aminoacetic acid it is quite apparent that its use in the treatment of myasthenia gravis and muscular dystrophy of either the progressive or the pseudo-hypertrophic type offers the patient greater hope than any form of treatment heretofore employed. Its use in other conditions cannot as yet be recommended on the basis of the meager investigations thus far reported. The Council declared aminoacetic acid acceptable for New and Nonofficial Remedies. (J. A. M. A. April 6, 1935, p. 1239)

Staphylococcus Toxoid.—Both favorable and unfavorable results of the use of staphylococcus toxoid in treating chronic staphylococcic infections have been experienced. On the basis of the available evidence one brand of this product was recently accepted by the Council on Pharmacy and Chemistry. The administration of staphylococcus toxoid to patients with chronic staphylococcic infections usually produces a rise in the titer of circulating antitoxin. This rise fails to occur by treatment with vaccines—the only other specific method. According to recent reports (D. S. Murray: *Staphylococcus Toxoid*, *Lancet* 1: 303, Feb. 9, 1935; C. E. Dolman, *Staphylococcus Toxoid*, *ibid*, 1: 306, Feb. 9, 1935) the rise is associated with a measurable improvement in the chronic localized staphylococcic infection. Failures have been reported but these occurred chiefly in cases of acne; in addition, the questions of the specificity of the strains of staphylococcus employed in making the toxoid, and the potency of the preparations used, must be considered. To date, the best results have been recorded with recurrent boils and the least successful with acne. (J. A. M. A., April 20, 1935, p. 1421)

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FRACTURE PROBLEMS*

By
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The proper procedures in the early history of fracture treatment and the immediate recognition of all local and general pathology are important. Immediate splinting of the part involved regardless of the certainty of a fracture should be done. "Splint them where injured," thereby preventing unnecessary local trauma and shock. The benefit of splinting a fracture before transportation is attempted was demonstrated forcibly during the World War when the mortality rate was reduced in compound fractures of the femur from nearly eighty per cent to sixteen per cent after the adoption of this procedure. The splinting should be the simplest, most effective and most easily applied. In every case the joints which are proximal and distal to even the suspected fracture should be splinted.

The type of treatment depends on the individual case. Each fracture with its complications is a law unto itself, demanding individual commonsense surgical judgment. The treatment should be adaptable to the fracture; the fracture must not be adapted to the treatment.

Too frequently are superficial and careless physical examinations made, the result being that fractures are often overlooked. Certain cardinal physical signs are not always necessary to indicate a fracture. This is especially true in fractures of the spine where a patient may receive a slight or moderate fall on the buttocks, and afterwards suffer very little or no pain whatever

in the spine, but when roentgenograms are taken a compressed fracture of one or more vertebrae is seen. We should always be suspicious of a fracture of the spine in even the slightest injury, directly or indirectly, to the back, buttocks, or head. A lateral roentgenogram of the spine when one suspects any bone involvement should always be made.

In contrast to the above the case is presented which comes to the hospital unconscious as the result of a head injury, badly shocked, and showing every evidence of brain trauma. This patient should be treated symptomatically as a severe brain injury irrespective of bone findings. In cases of this type a roentgenogram frequently does not show a fracture of the skull. To often are patients with injury of such type moved to get roentgenograms, causing more damage than is good derived from the knowledge obtained.

Roentgenograms, when possible, with anteroposterior and lateral views, should be made before attempting the reduction of a fracture. Following the reduction these same views as well as other roentgenograms at different intervals during convalescence should be made. These are not only necessary for checking up the position and union of the fracture, but as a protection and record for the doctor treating the case. When fluoroscopic examinations and reductions are done roentgenogram checks should also be made because fluoroscopic examinations cannot be recorded; such procedure, therefore, does no good before injuries. Fractures cannot be treated by roentgenograms alone. The reduction of a fracture constitutes only one of the important processes in its treatment.

Early reduction should be done providing local and general symptoms permit. Casts

*From the Orthopaedic Clinic of the Employees' Hospital.

*Presented to the Association in annual session, Mobile, April 17, 1935.

when applied should be cut along the whole course of application if there is any doubt whatever as to circulation. If, however, when there is marked soft structure involvement and no fear of malposition developing, some simple wire or board splint should be applied with hot wet boric acid or saline dressings for twenty-four or forty-eight hours or longer (removing dressings every twelve or fourteen hours and inspecting them).

Relaxation during the reduction of a fracture is demanded. This relaxation can be accomplished by continued traction, massage, spinal, local or general anesthesia, each one having its individual indications and advantages; however, no one method is to be used in every case.

Local anesthesia has taken a definitely indicated place with fracture work today, but it must not be used indiscriminately. Harm can result from its use even though the enthusiasts say they have never had any trouble. The author prefers a one per cent novocaine solution for local injection. Objections to local anesthesia are the following:

(a) When injecting the anesthetic, especially in fractures about the wrist joint, one gets a distortion of the landmarks; this, of course, is variable depending on the amount of anesthetic used.

(b) More pressure locally is brought about which prevents, to a certain extent, relaxation which would be conducive to manipulation and reduction.

(c) Theoretically at least, the pressure from the injected local anesthetic impedes the blood supply, increasing the possibility of gangrene—especially true when used in fingers.

(d) In certain cases the patient cannot be prevented from having some muscular rigidity.

(e) A latent spasticity of the muscles which seems to persist during convalescence more in the local anesthetic cases than when no local injections are used has been observed by the writer in several cases.

(f) There is possibility of an infection, which would be a catastrophe but should not occur if proper technique is carried out.

The majority of all fractures can be reduced by the closed manipulative method

and immobilized by circular or bivalved plaster casts. *When doing the closed reduction, care must be taken that no serious local trauma is caused.* Repeated attempts at closed manipulative reductions are not necessary before making a decision as to whether the continuous traction or open reduction technique is to be carried out in an individual case. Such type of treatment by the closed method is not a conservative but a radical method of fracture treatment.

More surgical judgment and care are usually demanded of the surgeon to be able to dextrously reduce a fracture by the closed procedure than by the open method. The surgeon who knows the anatomy, pathology and mechanics of the parts involved, knowledge of which is imperative, in the treatment of fractures, is able to do a closed reduction with minimum trauma. He is a more able surgeon than the one who cannot give such advantages, causing the patient to be subjected to unnecessary traumatizing. Frequent observation during the first few hours following the reduction of a fracture and every few days thereafter should be made. In any fracture living tissue is involved whether it be bones, muscles, ligaments, joints, nerves or blood vessels, any or all of which demand frequent attention, and without this observation undesirable results will usually occur. Fractures must not be tampered with too often; palpate only when necessary, but observe frequently.

The general condition demands as close attention as the local pathology. Not infrequently examinations will show the cause of a fracture to be a certain bone pathology indicating a local manifestation of some constitutional disease existing before the fracture occurred.

Too early weight bearing frequently brings about excessive painful callous formation and in certain instances non-unions and permanent disabilities. In certain fractures about the ankle joint, with very little bone involvement and no displacement or any possibility of a displacement of the fragments, early weight bearing soon after injury may be allowed provided a close fitting plaster cast and walking iron have been properly applied, and when supervision can be carried out frequently under ideal and controlled conditions.

Skeletal traction treatment, which has usually been classified in the past as conservative, appears to the writer to be rapidly becoming a radical treatment. Too frequently are its limitations and indications abused. The medical profession should not become overenthusiastic regarding the skeletal traction methods and assume that a panacea has been found for the treatment of all fractures. The writer still advocates and practices the use of skeletal traction in selected cases which in his opinion are ideal, and, when indicated, application should be carried out without hesitancy. Rarely, if ever, are these selected cases in children due to possible epiphyseal injury.

Skeletal traction has saved many extremities when properly used. The method demands close observation and patience. In the majority of instances, if used when indicated, good results will be obtained. Indiscriminate application of foreign material through the medullary canal should not be practiced. I prefer the Kirshmer wire in the majority of instances due to its small size and its ease of application.

There are many types of tongs, pins, and wires which are good. Some have one advantage, others another. Better results are probably obtained by learning the use of one tong or pin thoroughly than by constantly changing as new ones are devised. It is inadvisable to use tongs with long points. They are apt to pierce too far into the bone.

The advantages of skeletal traction are as follows:

It is the only traction whereby one can get maximum traction with minimum application of traction material applied.

Since skeletal traction is direct, therefore, much less weight is required to overcome shortening.

Traction is regular and continuous, which it must be to be effective.

Properly applied, the method is painless, and the patient is comfortable throughout the entire course of treatment.

The lower fragment is at all times under excellent control and can readily be brought into line with the upper one.

Since this leaves the rest of the limb entirely free, active and passive motions may be readily performed at the joints.

Open operation can be avoided in a large majority of cases.

Different types of physiotherapy treatments can be more easily applied.

Some of the disadvantages of skeletal traction are (1) the possibility of infection; (2) the introduction of foreign material through the medullary canal; (3) overextension of fragments which may cause a delayed or non-union, and (4) a rotation of the distal fragment if alignment is not frequently watched.

Adhesive plaster is in common use as skin traction and works well within limitations. A good grade of moleskin adhesive is preferable to zinc oxide adhesive.

Too prolonged traction should be guarded against because it brings about a varied period of temporary muscular paralysis which is difficult to overcome at times, and also, when using skeletal traction for too long a time infections are more liable to occur around or along the course of the wire or pin. As soon as alignment is restored and sufficient callus has formed and some type of fixation can be applied, the traction should be removed.

Open operative reductions when indicated should be done without hesitation. The indications, however, for open operative reductions, before first trying to do the reduction by the closed or traction methods, are few. It is not necessary to discuss the technique of different types of internal fixation except to say that as in all other methods of fracture treatment the surgeon should use that recognized standard method with which he is most familiar, and, if not familiar with such methods, proper consultants should be obtained.

When delayed union is present be slow to call it non-union, because if surgical interference is carried out too soon in such types of cases the surgeon may be defeating the whole purpose and progress toward union. Frequently patience on the surgeon's part will be rewarded by union taking place. Generally speaking a delayed union is not a non-union until six to eight months or longer from the date of injury.

Too early weight bearing after removal of all fixation, especially in fractures of the ankle or knee joint, should be guarded against. Frequently fractures of the knee

joint during early convalescence do not show any instability but, if walking is allowed too soon without a support, become unstable. The same is true of ankle fractures.

Too prolonged fixation is a very disabling procedure. It is not conducive to early function. Early active motion used by the patient is one of the most important procedures in accomplishing good functional results. Hot and cold contrast baths are to be used when sufficient callus formation has taken place to allow the temporary removal of any fixation from the involved part. Massage and other forms of physiotherapy when accessible are of great help. All of these procedures should be under the direct supervision of the doctor treating the case, and when possible in cooperation with a capable physiotherapist of the medical profession.

The cooperation of nursing in physical therapy is essential. In hospitals where there are physiotherapy departments, the patient often gets the impression that all he must do to obtain function is to visit this department once daily. This, of course, is a tragic development.

The splinting in physiotherapy is too frequently overlooked. In a shoulder with a weak deltoid and contracted pectoralis major, no physical therapy will produce function by an hour's treatment if the arm is allowed to hang for twenty-three hours instead of being in an abducted position.

One of the most important physical agents to use in fractures is exercise. The muscles of the body are expected to work together in the coordinative movements which we use in our daily ordinary work and they will work together longer when there is a purposeful nature in the exercise. Therefore, curative occupational therapy is probably the best exercise and is of the greatest value. Even without expert directions the surgeon can with a little ingenuity use occupational therapy.

One's ability as a surgeon in treating fractures is not determined entirely by the method or methods of treatment which he uses but by the functional results obtained. The surgeon behind the treatment is most important. Frequent observations during the convalescent period of a fracture are essential. The surgeon who reduced the

fracture should realize that it is not beneath his dignity and responsibility to remove a cast or splint during convalescence and inspect an injured limb, and to reapply the splint, giving his opinion for future treatments. Good surgical judgment is just as necessary during the convalescence of a fracture as at the time of the reduction.

Ultimate results to be attained and hoped for in any fracture are union, alignment and function. When all other factors are equal, perfect bone approximation is usually conducive to early union and restoration of function. However, the possibility of obtaining good functional results when good alignment is present should never be sacrificed merely to obtain perfect bone approximation, because a return to normal function is not always dependent on perfect bone reapposition. This is mainly true in shaft fractures but usually not so in joint fractures where it is best to get as good anatomical position as possible to obtain good function. Finally, function is not only dependent upon union and alignment but also upon full cooperation and determination of the patient to aid himself during convalescence.

The psychologic aspect of the patient with a fracture is an individual problem. A thorough understanding by the patient as to his condition should be sought by the physician, and the patient assured that he will have an excellent chance to recover normal functions if such is at all possible. Due consideration should be given to the compensation case who generally has a longer disability than the corresponding injury in another patient. Confidence of the patient in the physician is essential.

Blood Stream Infections—Blood stream infections have long been recognized, and much has been written concerning them. The intensity and duration of symptoms vary greatly, depending upon the invading organism, upon the resistance of the patient, *et cetera*. The mortality is and has always been high. Many different terms and classifications have been used.

Generalized infection, blood poisoning, blood stream infection, septicemia and septicopyemia are designations often used to indicate various types of this dreaded and dangerous condition.—*Reeves, Texas State J. Med., May '35.*

SAFETY OF LOW CESAREAN SECTION IN THE OBSTETRIC EMERGENCY*

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By obstetric emergency I refer to that type of case wherein arises a sudden condition calling for immediate delivery or termination of pregnancy. Since becoming connected with a small hospital in the southeastern part of the State, I have been impressed with the comparatively large number of cases which are sent in for termination of pregnancy, because of some abnormal development or complication arising at or near term. Many of these have already had a test of labor, with repeated examinations and instrumentation, and come to us as potentially infected cases. With these cases the classic cesarean section, with the incision in the fundus, is never considered. This is due to two reasons. In the first place, the danger to the mother is too great; and in the second place, we have had uniformly good results from the use of low cervical section. It is for the latter reason that I have chosen this subject.

The purpose of this paper is not to defend the use of cesarean section in general, nor is it intended to advocate extension of the indications for abdominal section. DeLee¹ feels that too many abdominal deliveries are being made and too many women are dying following abdominal delivery. He attributes this to the fact that the indications for section are being too loosely applied, or that too many women are being subjected to this type of delivery without allowing them a reasonable test of labor. Ginglinger and Tassovatz² concur in favoring a test of labor. Stander,³ on the other hand, feels that too many patients are sub-

jected to the so-called "test of labor," with final recourse to low cervical section. He prefers that the number of elective sections be increased at the expense of the low cervical section after a test of labor, because of the added risk to the mother resulting from the progress of labor over a period of several hours.

Roughly, the indications for low section are the same as those for the classic operation. It should be given preference in certain indications, such as infected or suspected infected cases resulting from previous handling or instrumentation. Under this heading would fall the following classes:

1. Infected or potentially infected cases where delivery by the vaginal route or by classic cesarean would perhaps produce an unfavorable outcome to both mother and baby.
2. Cases where an abnormal pelvis exists, particularly the borderline type, where a trial labor has been allowed, with possibly an attempted forceps delivery.
3. Cases where a prolonged labor has been tried with repeated vaginal examinations, with little or no progress, such as is met with in cases of cervical dystocia or uterine inertia; and
4. Cases where a very prolonged labor has taken place, in which vaginal delivery seems impossible, whether they are considered clean or potentially infected.

It is readily seen that these classes are not independent, because a single case may fall in two or more of these classes.

It is generally admitted that the pregnant uterus is sterile up until the time of onset of labor. The work of Harris and Brown⁴ has served to increase our knowledge regarding intrauterine infections. They have shown that vaginal examinations and premature rupture of the membranes predispose to invasion of the uterus by infection but that the absence of these factors does not insure a sterile uterus, thus

*Presented to the Association in annual session, Mobile, April 16, 1935.

1. De Lee, Joseph B.: Low or Cervical Cesarean Section (Laparotrachelotomy), *J. A. M. A.* 84: 791-798 (March 14) 1925.

2. Ginglinger, Albert and Tassovatz, Sin'cha: Twenty-Four Years of Conservative Low Cesarean Section, *Gynecologie et Obstetrique* 30: 15 (July) 1934.

3. Stander, H. J.: *Obstetrics and Gynecology* (Curtis), Volume II, 437-472. W. B. Saunders Co., Philadelphia.

4. Harris, John W. and Brown, J. Howard: The Bacterial Content of the Uterus at Cesarean Section. *Am. J. Obst. and Gynec.* 13: 133-143 (February) 1927.

indicating that intact membranes were not an effective barrier to the entrance of bacteria into the lower uterine segment. They also showed that elevation of the temperature is a valuable sign of infection but that a normal temperature cannot be accepted as evidence that ascending infection has not already occurred. These findings emphasize the fact that we cannot be sure in any case that we are dealing with a clean case after labor has once set in. DeLee⁵ makes a statement that, "if the low cervical section is safer in suspect and infected cases than the old classical, by the same token it is safer than the old classical section in clean cases." He has many followers including Bailey⁶ who reported one hundred and nineteen cases in which the low cervical section had been used without a maternal death. Schumann⁷, on the other hand, never uses the low cervical operation in the performance of elective sections and gives as his reasons the following: First, it is more difficult and requires more time because it is more complicated. Second, it is more difficult to deliver the child through the low section when the lower uterine segment is not thinned out, as necessarily takes place after labor progresses for a while. Third, he does not feel that the protection against infection is necessary in the performance of the classic section; and fourth, local anesthesia is less satisfactory in the performance of the low section than in the classic section. He does not offer these statements, however, as a criticism of the low section, but he reserves this operation for potentially infected cases in which labor has progressed for some time. Galkin⁸ suggests one other disadvantage in the use of the low section; namely, that in infected cases it is not the abdominal cavity but the cellular tissue of the parametrium

which becomes infected and that secondary drainage in these cases is extremely unfavorable.

Although the greater part of our cases are in labor or are potentially infected cases, there are a few who come in with such conditions as severe toxemias, placenta previa, and an occasional case wherein some pathologic condition exists in the mother, such as heart disease or malignancy of the cervix, which makes termination of pregnancy an immediate necessity. This group of cases would allow consideration of either the classic or the low cervical section. We have used both and, after having observed results from both types, we are leaning more and more toward the low section as a routine when abdominal delivery is indicated.

It is more or less generally agreed that the low section is much safer than the classic section in suspected or infected cases. Hysterectomy following abdominal delivery has been resorted to by some obstetricians but with the perfection of the technic of low section, we are able to preserve the normal functions of the maternal organism, including the ability to further reproduce, and prevent the unpleasant ordeal which some women go through in passing a premature menopause. In addition to a lessened mortality and morbidity rate, DeLee¹ further claims that fewer adhesions, fewer hernias, and less likelihood of utero-abdominal fistulas follow this type of operation.

Greenhill⁹ states that to his knowledge there was not a single case of uterine rupture following the low section in one thousand cases, and later¹⁰ states that he was able to find only three authentic cases out of thousands of this type, which resulted in rupture of the uterus during subsequent pregnancies. The incisions in the lower segment of the uterus, where fibrous tissue predominates over muscle, heals better than in the fundus where classic section is performed. In this region the relaxation and contraction of the uterine musculature

5. De Lee, Joseph B.: *Practical Medical Series (Obstetrics)*, p. 214, 1932.

6. Bailey, K. Vernon: *Lower Cesarean Section as Routine*, *Lancet* 1: 672 (March 31) 1934.

7. Schumann, E. A.: *Elective Cesarean Section as Prophylactic Measure against Obstetric Mortality and Morbidity*, *Am. J. Obst. and Gynec.* Feb. '32; abstract in obstetrics section of *Practical Medical Series* of 1932, p. 222.

8. Galkin, V. S.: *Cesarean Section in Infected Cases of Placenta Previa*, *Monatsschrift für Geburtshilfe und Gynakologie*, 77: 428-436 (Dec.) 1927.

9. Greenhill, J. P. (Report by Vignes): *Low Cesarean Section under Local Anesthesia*, *Bull. Soc. d'Obst. et de Gynec.* 7: 468 (July) 1930.

10. Greenhill, J. P.: *Shall the Indications for the Low or Cervical Cesarean Section be Extended?* *International Clinics*, 4: 171-180 (December) 1925.

may interfere with proper coaptation of the wound edges.

Beck¹¹ claims less frequent hemorrhage following the low section because the placental site is less frequently encountered and, in cases where hysterectomy should be necessary to control the hemorrhage because of improper uterine contractures after delivery, time is saved because the lower uterine segment is already exposed and the bladder flap dissected. Other favorable claims which may be made are that there is less tendency for postoperative shock, abdominal distention and vomiting.

The operative technic which we have used is very similar to that described by DeLee¹ and later by Beck.¹² A midline incision is made between the symphysis and the umbilicus. The parietal peritoneum is opened in the region of the upper angle of the incision to avoid the bladder which is usually found placed high up on the abdominal wall. The lower uterine segment is exposed with retractors and a transverse incision is made through the peritoneum at the junction of the lower uterine segment with the body of the uterus. The lower flap of the peritoneum is reflected downward carrying with it the bladder. The upper flap is pushed upward to a point sufficiently high to go beyond the end of the intended uterine incision. The uterine incision is made vertically in the midline, a stab wound being first made and the incision extended by cutting with a pair of straight scissors. The flow of blood and amniotic fluid is removed by means of suction. The presenting part may then be delivered by passing the hand into the uterus beneath the presenting part and guiding the part through the abdominal wound. Occasionally forceps may be necessary at this stage. Pituitrin is then given and a traction suture is introduced into each angle of the uterine wound and the uterus lifted up into the abdominal wound. The placenta with its membranes are removed and deep interrupted sutures are placed through the mus-

culature extending down to the endometrium. A second layer of interrupted sutures completes the closure of the uterine incision. These include approximately the outer half of the thickness of the uterine musculature and are placed so that they intersperse those of the first layer. The upper flap of the peritoneum is then brought down and fastened to the uterus by several catgut sutures. Following this the lower flap is brought up to overlap the upper and is fastened in the same manner. The abdominal wall is closed as in other abdominal operations where a midline incision is used.

The anesthesia which we have used and found satisfactory is spinal. However, our greatest authorities believe that local infiltration anesthesia should be the anesthesia of choice. Reports of bulbar paralysis are reported following use of the spinal but we have not had this unfortunate experience.

SUMMARY

With the low cervical operation at our command, we are able to perform cesarean section with an extremely high degree of safety even in infected or potentially infected cases. We know that a few patients develop peritonitis following non-suppurative abdominal operations in spite of extreme efficiency and sincere care. It seems useless to hunt for measures, direct or indirect, which will increase the resistance of the organism to infection in primarily non-suppurative abdominal operations. With abdominal deliveries as with any other abdominal operation, the causes of complications are to be avoided only by observation of the sharpest indications and greatest carefulness, or briefly, by respect for the life that has been given into our hands.

Fractures of the Spine—In spite of the fact that numerous authors have emphasized the overlooked fracture of the spine, fractured spines are still missed. For this reason I must add my plea for eternal awareness. Every victim of an automobile accident, all those injured by falls from a height, patients with fractures of the os calcis, and all other severely injured patients should be surveyed for the possibility of spinal fracture. It is our custom to percuss deeply the spinous processes and the areas laterally adjacent thereto. If tenderness is elicited or backache complained of, a lateral view centered at the dorsolumbar junction is the most likely plate to show fracture.—*Davis, Penn. M. J., May '35.*

11. Beck, Alfred C.: The Advantages and Disadvantages of the Two-Flap Low Incision Cesarean Section, With a Report of Eighty-three Cases Done by Fifteen Operators, *Am. J. Obst. and Gynec.* 1: 586-594 (March) 1921.

12. Beck, Alfred C.: Further Experience with the Two-Flap Low Incision Cesarean Section, *J. A. M. A.* 21: 489-492 (December) 1922.

FOREIGN BODIES IN THE AIR AND
FOOD PASSAGES*

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Bronchoscopy and esophagoscopy became part of the otolaryngologist's field more than thirty years ago with the work of Gustav Killian in the former and von Mickulicz in the latter. Since the pioneering of these two great men, others, as Stoerk and Jackson, have done much valuable work in furthering our present day knowledge of this most interesting subject.¹

Up until the past few years the removal of foreign bodies from the tracheobronchial tree and esophagus was looked upon as an outstanding accomplishment, but since the comparatively recent improvements in methods and instruments the removal of a tack from a bronchus or a fishbone from the esophagus is looked upon as just a part of the day's work by the specialist in peroral endoscopy. Certain sensational newspapers, however, continue to exploit these cases in bold headlines and feature stories, a thing which is valuable, perhaps, in that it keeps the public foreign-body-minded. The propaganda has helped educate parents and those in charge of children to make efforts toward the prevention of such accidents; but in spite of warnings from the lecture platform and the press, the introduction of foreign bodies into the esophagus and air passages continues to be one of the real tragedies of childhood and medicine in general.

The family physician or pediatrician is usually called first when these accidents occur and it is of greatest importance that they become familiar with and understand the diagnosis of foreign bodies in the esophagus and tracheobronchial tree. Diagnosis of such conditions, therefore, will be the main object of this paper.

After the initial symptoms of coughing, wheezing, gagging, and even dyspnea and cyanosis, there may be an interval during which the patient is entirely quiet, and by

the time of the arrival of the practitioner he will think first, quite naturally, of the commoner conditions, such as pneumonia, croup, or indigestion, which might possibly have caused the symptoms; but to forget the possibility of a foreign body as the offender is inexcusable. The attending physician must learn to give credence to any suspicion on the part of the patient or his parents that the symptoms are due to a foreign body, and definitely rule it out as the causative factor in the present condition.

Foreign bodies are classified as vegetable and mineral and practically everything which is able to pass the fauces has been reported recovered from the air and food passages. In a recent study of foreign bodies, Jackson² has found that bones, with 350 cases, are the most frequent objects removed from the respiratory and food passages; the next most frequent offenders are coins, with 306 cases, and safety pins with 128 cases reported. In the tracheobronchial tree the vegetable foreign bodies are usually the more serious because of the distressing tracheobronchitis which practically always follows if they are not removed immediately. In the esophagus, on the other hand, the metallic bodies are apt to be the most serious offenders because of the possibility of laceration or of erosion through the delicate walls of the structure with resulting mediastinitis or esophago-tracheal fistula.

Metallic objects and bones in the lung may remain overlooked for years. They may become walled off by a surrounding fibrotic wall, or they may cause various kinds of low grade pulmonary suppuration. In these cases, the patients are often treated for recurrent attacks of grippe, for enlarged glands and sometimes for tuberculosis and only by careful diagnosis by means of the physical signs, x-ray and exploratory bronchoscopy will they be found.

A foreign body may be lodged in the tonsil, base of the tongue, pyriform sinuses, epipharynx, hypopharynx, esophagus, larynx, trachea or bronchi. The initial symptoms will depend on the size, character and location of the foreign body. There is generally coughing, gagging, wheezing,

*Presented to the Association in annual session, Mobile, April 16, 1935.

1. Miller, Joseph W.: Arch. Otolaryng. 116: 188-196 (August) '32.

2. Jackson, Chevalier: Foreign Bodies, The Cyclopedia of Medicine, Philadelphia. F. A. Davis Co. 1932.

and, if the obstruction is large, even dyspnea and cyanosis enough to cause death if the offender is not removed immediately. Following these symptoms there may be a period during which there are no outstanding symptoms and the patient remains fairly comfortable. Esophageal foreign body will cause pain each time the patient swallows, but pain is never felt in the bronchi and rarely in the trachea.

Laryngeal foreign bodies cause a chain of symptoms varying from slight hoarseness to aphonia, croupy cough, dysphagia, dyspnea and cyanosis. Croupiness usually means subglottic swelling and has to be differentiated from the croupiness caused by diphtheria. If the diagnosis of laryngeal obstruction is made, immediate laryngoscopy should be performed—indirect in the adult, and direct in children—to determine the cause.

The symptoms in tracheal obstruction are usually cough and hoarseness. Dyspnea and cyanosis are present if the obstruction is large. If the body is small in size and is adherent to the wall of the trachea, the air rushing by it causes a wheezing sound which is audible at the open mouth of the patient. If the object is loose within the trachea a rumbling noise and sudden stopping caused by the sudden expiratory arrest of the foreign body by the subglottic edema may be detected at the mouth, particularly when the patient coughs. Palpation over the trachea with the thumb will reveal a thrill. The latter symptoms of "asthmatoïd wheeze," "audible slap" and "palpatory thud" have been described by Jackson.³

In the bronchi the original symptoms of foreign bodies are the same as those noted above. For varying lengths of time, following inspiration of the object, there may be a symptomless interval. Metallic objects, such as straight pins, tacks, collar buttons, etc., may remain in the bronchi for months and even years without causing untoward symptoms. Vegetable organic material, such as grains of corn, beans, peanuts and seeds, generally give violent symptoms within a short while as they cause laryngo-tracheobronchitis, with its fever, cough and generalized toxemia.

3. Jackson, Chevalier and Jackson, Chevalier, L.: *Bronchoscopy, Esophagoscopy and Gastroscopy*. W. B. Saunders Company, Philadelphia, 1934.

The right bronchus is the most frequent site for a foreign body to lodge as it is almost a direct continuation of the trachea anatomically. The physical signs will vary with whole and partial obstruction of the bronchus. There are three kinds of obstruction to be remembered: (1) by pass-valve obstruction, like a partially closed valve; (2) check-valve obstruction in which air passes in but not out (emphysema) and; (3) completely shut-valve in which the air cannot pass either in or out, the remaining air becoming absorbed (atelectasis). Each of these types will give rise to somewhat different findings in the examination of the chest, but the signs found more often are

- (1) Limited expansion
- (2) Decreased vocal fremitus
- (3) Impaired percussion note
- (4) Diminished intensity of breath sounds distal to the foreign body.⁴

All of these findings are not necessary to make a positive diagnosis, however, as the size and position of the foreign body may cause them to vary. Frequently, the object itself may alter its position in the tracheo-bronchial tree due to respiration and changes in posture of the patient. A foreign body situated at the bifurcation of the trachea often gives signs in both lungs. Where there is entire occlusion of a bronchus, vocal fremitus and vocal resonance will be entirely missing and rales will be heard in the unaffected lung; where the bronchus is only partially blocked, rales will be heard distal to the foreign body in that lung.

It is quite often difficult to differentiate between a small atelectatic part of a lung and a localized area of lobular pneumonia. In atelectasis there is a flat percussion note over the area with absent breath sounds, few if any rales and lessening of the vocal resonance; in a pneumonic condition there is bronchial breathing, oftentimes rales and an increase in vocal resonance.

The x-ray is one of the most valuable means of diagnosis in disputed foreign body cases and should always be used. A complete examination including the nasopharynx and extending as far as the ischia

4. Ibid.

should be made. All radiopaque bodies will show up and vegetable substances will cause obstructive findings in the lung substance which will be readily recognized by the competent roentgenologist. Where there is an obstructive emphysema, fluoroscopic examination will show a flattening of the diaphragm on the affected side and the heart and mediastinal wall at the end of expiration travel toward the unaffected side. The affected lung is less dense than the unaffected because of the retention of air, which causes the obstructive emphysema. To be distinguished from this is compensatory emphysema, which is found in the unaffected lung at times. When the obstruction of a bronchus is complete, as in cases where a bean swells so as to block the bronchus completely, obstructive atelectasis occurs after the air in the lung becomes absorbed, and the x-ray will show that the heart and mediastinal structures have moved over toward that side. The latter two x-ray signs mentioned, obstructive emphysema and obstructive atelectasis, when found, are diagnostic of foreign bodies in practically all cases.⁵

The initial symptoms of esophageal foreign bodies are usually the same as those in the air passages. At first there is choking, gagging, wheezing and coughing. Following these symptoms comes pain on swallowing and sensation of the presence of the object somewhere along the esophageal tract. If the foreign body is large enough to cause complete obstruction of the esophagus at the upper end the patient will be unable to swallow anything. If the obstruction be low down, all food will be regurgitated a short time after swallowing. Large objects such as coins or discs of any kind are prone to lodge in the upper part of the esophagus on a level with the larynx. Others may be found anywhere in the esophagus or pushed on into the stomach. X-ray examination should always be made, having both anteroposterior and lateral views. Radiopaque objects can be definitely localized in this manner. In cases of non-opaque foreign bodies where there are signs of obstruction, a barium capsule swallowed by the patient will become lodged at the point of the obstruction when

viewed under the fluoroscope. Iglaue⁶ has devised a method of demonstrating non-opaque foreign bodies in the esophagus and esophagotracheal fistulas by the use of ingested iodized oil visualized under the fluoroscope. In cases where the x-ray findings are entirely negative, but where the history and symptoms are highly suggestive of the presence of a foreign body, it is perfectly justifiable to do an exploratory esophagoscopy to rule out the presence of the possible offender.

When the diagnosis of foreign body has been made definitely, an endoscopic examination should be done at once, whether the immediate symptoms are severe or not. Of course, cases have been reported in which objects have remained unnoticed in the lung for long periods of time but they are always a potential source of danger to the patient. Bronchoscopic and esophagoscopy examination done early by a competent surgeon, thoroughly equipped for the work, carries only a low mortality rate and there should be no compromise where the health and life of the patient are at stake.

6. Iglaue, Samuel: Non-opaque Foreign Bodies in the Esophagus and Esophagotracheal Fistula. Their Demonstration by Ingested Iodized Oil. *Arch. Otolaryng.* 7: 230-233 (March) '28.

The Bradycardias and the Tachycardias—The determination of the pulse rate is generally no more than one of the many aids in the diagnosis of the diseased states; and most frequently it is a minor one. Under certain circumstances, however, its importance increases tremendously to such an extent that treatment is directed immediately toward the control of the rate and the physiologic cardiac change producing it.

The diagnosis of the pulse rate disturbances can often be approximated or made by the examining physician at the bedside. No one can question the value of the electrocardiograph in the cardiac mechanism disturbances, nor can it be denied that in many instances its records are essential for definitive diagnosis. There yet remain, however, localities in which it is not available and individuals whose financial condition does not permit its use. In rare cases, as for instance in ventricular paroxysmal tachycardia, it is dangerous to delay therapy until graphic records can be made. Very excellent technic is a requisite for the obtaining of good records, and a wide experience is eminently desirable for the interpreter.—*Bondurant, South. M. J., June '35.*

5. *Ibid.*

THE PROGNOSIS OF PULMONARY TUBERCULOSIS*

By
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Montgomery, Ala.

In Alabama, with tuberculosis ranking third as a cause of all deaths and first as a cause of death in the active period of life, namely fifteen to forty-five; with over eight thousand cases of tuberculosis on record and an even greater estimated number of unrecognized cases; with less than two hundred and fifty beds being maintained in county tuberculosis sanatoria and not a single existing private tuberculosis sanatorium; with practically all our general hospitals refusing to admit tuberculosis patients for treatment; with only a handful of physicians equipped for and using surgical collapse measures; and with more than ninety per cent of our tuberculosis population financially unable to receive consultation service and utterly dependent upon their family physician for advice and treatment, the immediate outlook for tuberculosis control in this State appears none too bright. If, however, we review the advances that have been made in fairly recent years in the diagnosis and treatment of this condition, we cannot fail to realize that a new era and an infinitely brighter prognosis is possible for a large majority of those suffering from phthisis.

"The diagnosis of pulmonary tuberculosis can be more or less easily established at present by any clinician who intensively studies the symptomatology, the physical and roentgen signs and the bacteriological findings. But having done this he has not yet rendered the most important service to the patient who justly seeks the information as to the probable course and termination of the disease." In these words Fishberg has stressed the importance of prognosis in pulmonary tuberculosis.

What are the chances for recovery? If chances are favorable, how long will be required for recovery? What tuberculous or non-tuberculous complications are likely to occur and how will they affect the end result? What restrictions in work and play are required once the disease has become

arrested? What effect on prognosis is expected from surgical measures as compared to bed rest in the treatment of cases suitable for collapse measures? What are the advantages, if any, of sanatorium care over home treatment with regards to the ultimate outcome? These are but a few of the questions demanding an answer of the physician in charge of tuberculosis patients.

The wise physician will determine and correlate the existing facts before rendering an immediate prognosis and will be guided by future observations, serial x-ray studies and laboratory findings in making further predictions.

In this short paper I shall briefly review the elements that go to make up the prognosis of pulmonary tuberculosis and also give a few pointers for improving the ultimate outcome. Although this paper deals only with the tuberculous patient, one should always keep in mind the prevention of spread of the disease and the study and prognosis of past and present contacts.

Many laymen and some physicians still harbor the notion that only very early tuberculosis is arrestable. Laennec, the first to make a scientific study of the pathology of phthisis and who introduced physical diagnosis, pronounced it incurable. Even he recognized that many cases recover for he said, "The cure of phthisis is not beyond the power of nature but it must be admitted, at the same time, that the art possesses no certain means of attaining this end."

Long before bacteriology and roentgenology were developed to enable exact observations, many physicians reasoned that with skin and glandular tuberculosis clearing up the same could be expected in the lungs. Following these men, pathologists demonstrated that a large percentage of all autopsies showed cicatrized lesions of tuberculosis in the lungs in individuals dying of other conditions. Serial x-ray studies have made it possible to actually watch the development of tuberculous lesions from infiltration to caseation, liquefaction and cavitation in some and in others to see the healing by cicatrization of extensive pulmonary lesions, even cavities. Many clinicians in the past century and the early part of the present century reported large series of

*Presented to the Association in annual session, Mobile, April 16, 1935.

cases recovering health under different methods of handling.

We now have ample proof that a large number of cases of pulmonary tuberculosis in all stages and under widely different circumstances can be arrested. With the curability or arrestability of the disease established let us proceed with the chief elements of prognosis.

The first element in prognosis of tuberculosis is the *form* of the disease. The type of the lesion is more important than its extent. Miliary tuberculosis involving the lung offers only a remote chance for recovery. Some few cases have apparently recovered and later show multiple small areas of calcification. In recent years, mycotic infections, have been shown to give just such a picture so that many men doubt that any cases of miliary disease recover. Patients with acute pneumonic tuberculosis have a very poor prognosis; however, the use of artificial pneumothorax offers a brighter outlook. In apical tuberculosis, such as those showing salients, the prognosis is quite favorable despite treatment or lack of it.

Fibroid type tuberculosis offers a good prognosis for life so long as toxic symptoms are absent. With fever developing the disease becomes a chronic exudative type.

In chronic exudative tuberculosis the prognosis is extremely difficult to make. Children handle first infections very well but chronic exudative lesions poorly. Since old people usually do not over exert themselves, they handle chronic tuberculosis quite well. They do not however easily arrest their lesions. Collapse measures in all ages seem to offer a very decided improvement in the outlook for such type cases. Family history of tuberculosis does not seem to influence prognosis of chronic cases one way or the other. Those who develop their lesions slowly seem to do better than those who have a sudden onset and rapid break-down of lung tissue. Cases that hemorrhage early are scared into a routine of treatment and usually have a better outlook as a result.

Childhood type tuberculosis is not to be considered in this paper except to call attention to the fact that by breaking the contact with the open case and giving the child periodic examinations the prognosis is ex-

cellent in all but a few types of lesions. The usual calcified primary foci cases with calcified tracheobronchial glands do not call for the grave prognosis given by some misinformed physicians.

The second big element in prognosis is the determination of activity and this is best done by a study of constitutional symptoms. Many phthisiologists have said that active tuberculosis is always accompanied by fever. This is not absolutely true. By serial studies, lesions have been seen to extend without causing temperature elevations. This is the exception and not the rule. In the main a long continued high fever in pulmonary tuberculosis offers a bad prognosis. This is especially true if the morning temperature approaches the afternoon elevation. A careful temperature chart taken over a period of weeks gives the clinician valuable information. Toxicity sufficient to give gastro-intestinal upsets that persist is of grave prognostic significance. Weight gain is a fairly good prognostic sign but not in the face of fever. Hemoptysis in itself does not affect the prognosis but when accompanied by a rise in temperature which lasts it bespeaks a tuberculous broncho-pneumonia which has a bad prognosis. New spreads often follow hemorrhage. In general a low blood pressure is a poor prognosis sign but a low blood pressure which rises with treatment of a case has a favorable significance. In general, the prognosis is less favorable in positive sputum cases.

The third element in prognosis of pulmonary tuberculosis is the presence of complications. Tuberculous laryngitis and tuberculous enteritis offer a very gloomy prognosis. Such cases that are suitable for and receive collapse measures have a less gloomy outlook. Pleural effusions are rather common especially in pneumothorax cases and may even improve on the collapse. They usually cause general symptoms and may cause a spread in the extent of the lesion.

Tuberculous empyema is one of the worst complications of pulmonary tuberculosis. It very frequently causes amyloid degeneration of the liver and kidneys.

Spontaneous pneumothorax is serious but not near so fatal a complication as some men believe.

The location and the extent of the tuberculous lesion, as determined by physical examination and x-ray study, is the fourth element in prognosis. Lesions located above the clavicle do much better than those below this level. The seriousness of the latter can be minimized by early use of surgical collapse measures. In general the more extensive the lesion, the longer is required for healing. The presence of cavities show that the process is a chronic one but at the same time such cases usually have positive sputa and are in constant danger of an extension of their process, especially at the time of a massive hemorrhage. The closure of cavities greatly improves the prognosis and this is accomplished better and quicker by surgical methods.

The economic condition of the patient largely determines whether he can afford to devote the necessary time for cicatrization of his lung lesion. Pulmonary tuberculosis is said to be the most expensive of diseases. In general, the better fixed a person is financially the better the prognosis. Here again surgical collapse measures change the picture and offer a quicker and better prognosis for all classes.

The fact that tuberculosis becomes walled off and arrested rather than eradicated from the body results in the danger of relapses and ultimate spread of the process. We must therefore consider prognosis of the arrested case.

The criteria for an arrested case are:

1. Absence of all symptoms—cough, fever, etc., for at least six months.
2. Absence of tubercle bacilli from the sputum for six months.
3. Absence of physical signs denoting activity in the chest.
4. A normal sedimentation rate.
5. A stationary lesion to serial x-ray study.
6. Absence of symptoms and physical signs upon return to graded exercise.

In a truly arrested case the prognosis is dependent on the amount of cicatrization of the lesion, the occupation of the patient, and subsequent respiratory disease, the prognosis being best in the well cicatrized lesion in an individual with a light or not too strenuous occupation and one free from

further non-tuberculous respiratory disease.

Many phthisiologists consider a good collapse case as arrested tuberculosis. A patient with a collapsed lung cannot be followed by x-ray studies alone. The use of the sedimentation test will give the physician valuable information as to the activity in the collapsed lung while serial x-rays show up any new spread in the good lung.

Since it is possible for the apparently well cicatrized cases to hemorrhage or to flare up, only periodic examinations and careful observation can assure a permanently arrested condition.

In conclusion let me urge you, in so far as possible

1. To have a correct x-ray diagnosis and classification to accompany a complete history and clinical observations.
2. To consider every patient with pulmonary tuberculosis as a potential surgical collapse case. (Many sanatoria are using surgery with excellent results in over 90% of their patients.)
3. To use serial x-rays, sputum examinations and sedimentation tests in the follow-up of cases under treatment and observation.

Such practice will result in a brighter prognostic horizon for pulmonary tuberculosis and will be a constant source of satisfaction to the doctor, his tuberculous clientele and the public's health.

Value of Oxygen Therapy in Medicine—Certain mental diseases may be benefited by oxygen therapy. According to Lovenhardt, catatonic dementia praecox patients may have lucid intervals of about twenty minutes by hyperoxygenation, with the addition of carbon dioxide, evidently implying an anoxemia of the nervous tissue. Epileptiform attacks have been terminated abruptly in twenty cases by Murphy, by giving oxygen. He states that in two or three breaths the patient is completely relaxed. Asthma, according to Meakins, is promptly relieved by oxygen therapy. Diabetes also is supposedly benefited by it.

Poisoning by any substance which decreases the respiratory efficiency should be benefited by oxygen therapy. Oxygen combined with carbon dioxide is beneficial in poisoning with morphine, strychnine, chloroform, carbon monoxide, ether and alcohol.—*Nickel, J. Indiana M. A., May '35.*

THE SURGICAL TREATMENT OF
PULMONARY TUBERCULOSIS*J. O. LISENBY, B.S., M.D.
Atmore, Ala.

During the past twenty-five years, and especially during the last ten years of this period, the use of surgical methods in the treatment of pulmonary tuberculosis has increased so rapidly that there are now sections of the United States where these methods are as commonplace as is the use of quinine in the South for malaria. There are other sections widely distributed over the country where not even the names of these methods are familiar, and where practically no physician in any line of work is thoroughly informed as to their uses. This fact accounts for the deaths of about twenty per cent of patients dying from pulmonary tuberculosis each year.

This paper is presented here today for the purpose of calling this matter to the attention of the profession in this State.

The several surgical procedures used in the treatment of pulmonary tuberculosis are artificial pneumothorax, induced by the injection of air into the pleural cavity; phrenicectomy, phrenicectomy plus scale-notomy; pneumolysis, either external or internal, oleothorax, and thoracoplasty. The more commonly used methods are: (1) artificial pneumothorax, which is followed by internal pneumolysis when indicated if adhesions between the lung and chest wall prevent satisfactory collapse of the lung; and (2) extrapleural thoracoplasty, which is used in moderate to far advanced conditions.

James Carson^{1, 2} of Liverpool is usually credited with having placed artificial pneumothorax as a method of treatment before the profession in 1821 or 1822. By this method air is injected into the pleural cavity by the use of a simple and inexpensive apparatus with which air in amounts as small as twenty-five cubic centimeters is allowed to flow into the pleural cavity until 200 to 300 cubic centimeters have been in-

jected at the first sitting. At successive sittings further injections of air are made in amounts up to 800 cubic centimeters, the amounts injected being gauged by the pressure shown on the manometer. The air injections are usually kept up for periods ranging from one year to three years, depending upon the condition found in the chest when treatment is begun.

Indications for the production of an artificial pneumothorax are a fibrocaceous lesion with or without a cavity where the opposite lung is either sound or a quiescent lesion exists. Hemoptysis from one lung in amounts considered serious is also a definite indication for this procedure.

The training necessary for one to be able to do these treatments is easily obtained at numerous places throughout this country and there is no reason why a sufficient number of men should not be able to do this work in order that those who are dying in this State from the lack of this form of treatment may be taken care of satisfactorily.

After artificial pneumothorax and the other minor operations which accompany it have been used in the treatment of pulmonary tuberculosis and have been found unsuccessful, then it is that the radical procedure of extrapleural thoracoplasty is advocated for producing permanently a collapsed lung. This procedure demands the utmost in cooperation between the internist or phthisiologist and surgeon, and it is not an operation to be attempted lightly by a general surgeon but must be carried out by a surgeon having special training in thoracic surgery and more especially the surgery of pulmonary tuberculosis. In this operation sections of from three to eleven ribs are resected at one or more sittings, usually under local anesthesia.

Alexander³ has covered the indications for thoracoplasty so perfectly that I quote his words as follows: "In general, however, those patients are chosen for operation who have moderately or far advanced chronic tuberculosis, with or without hemoptysis; whose lesions are of the fibro-ulcerative type, with or without cavitation or empyema, and are principally confined to one lung; whose general condition, heart

*Presented to the Association in annual session, Mobile, April 16, 1935.

1. Alexander, John: *The Surgery of Pulmonary Tuberculosis*, 1925, p. 25.

2. Myers, J. Arthur: *Artificial Pneumothorax*, J. A. M. A. 103: 1299, 1934.

3. Alexander, John: *The Surgery of Pulmonary Tuberculosis*, 1925, p. 59.

and individual resistance to tuberculosis are fairly good and in whom all other treatment, including a sufficiently long sanatorium regime and attempted artificial pneumothorax, have failed."

CONCLUSIONS

(1) Prejudice against the surgery of tuberculous processes in other parts of the body probably accounts for the slow development of the uses of surgery in the treatment of pulmonary tuberculosis.

(2) The production of an artificial pneumothorax does not require unusual skill and should be more widely used in this State in the treatment of pulmonary tuberculosis.

(3) An unusual opportunity is afforded several well trained general surgeons in this State to take up the surgery of pulmonary tuberculosis.

GROUP HOSPITALIZATION

From Bureau of Medical Economics
American Medical Association

(J. A. M. A., May 4, 1935)

Since 1931, group hospitalization has been spreading throughout most sections of the United States. At first, group hospitalization was urged by commercial organizations whose interest in hospital care was secondary to the profits they could derive by promoting, organizing or conducting membership drives. Hospital administrators gradually shifted their attention from the commercial proposals to plans and contracts prepared, marketed and controlled by the hospitals themselves.

The House of Delegates has never recorded its approval of or opposition to the prepayment method of providing hospital care, per se. The Judicial Council in 1931 reported as follows on plans involving a combination of hospital and medical services:

"Within the last year, some community hospitals have announced their intention to provide medical, surgical and hospital service to families on a flat rate basis. In at least one instance, such service has been offered to families for \$35 a year, irrespective of the number of members in such families. In most instances, certain exceptions are made, in that persons with chronic diseases are not entitled to receive the benefits of the plan, and obstetric service is not supplied without additional compensation. The members of the Judicial Council doubt that it is wise to lead the people in any community to believe that all necessary medical and hospital service, even though chronic diseases and obstetric care be excepted, can be provided for the average family for \$35 a year. In the cases presented to it, the Judicial Council has advised against the adoption of such plans by community hospitals because it is believed that they are not economically sound,

in that they may be unfavorably affected by conditions entirely beyond control under which contracts cannot be fulfilled. There are other aspects of the matter that readily present themselves for consideration involving the interests of physicians in the community who cannot participate in such plans."

The promoters of group hospitalization declare that the schemes they propose are merely service contracts. It was pointed out, in a study made by the Bureau of Medical Economics, published in the American Medical Association Bulletin for October 1933, that group hospitalization contracts are insurance contracts. But the relationship of hospitals to state insurance departments and law observance, and the liability which a particular form of contract may impose on the contracting hospitals, are not the only items of importance in this newer method of marketing hospital services.

The nature of the contract is of vital concern to the medical profession. If hospitals are permitted to include medical services in their contracts for hospital care, the avenue is opened and the precedent is set for the practice of medicine by hospitals. Furthermore, it is possible that some hospitals that should be closed may, by the assistance of a group hospitalization scheme, continue to serve the public badly.

At present there is a wide variation in the status of group hospitalization schemes. Some are being operated with the sanction and active assistance of county medical societies; others are being operated in communities in which the county medical societies maintain a position of noninterference but close observation; in some places the medical societies have succeeded in having hospitalization contracts drawn so as to exclude all medical services, while in other sections the group hospitalization contracts include varying amounts of medical services and thus make it possible at a later date to add more and more medical care under the guise of hospitalization. There is grave doubt that any group hospitalization schemes are using actuarially sound bases for premium rates.

The theory of the insurance principle in the provision of hospital care appears to be sound, but in the application of this principle to hospitalization, as in the field of sickness insurance, numerous opportunities for perversion and abuse are offered and many of the dangers inherent in sickness insurance practice are introduced. The most important of these dangerous tendencies have already been mentioned; viz., failure to limit the contract coverage solely to hospital care, and the possibility of keeping active some undesirable institutions that, for the public good, should be closed.

The Bureau has a record of fifty-five group hospitalization plans that are now operating or have been discontinued. There are forty-four more plans that have been proposed but as yet are not operating.

Vomiting in the Newborn—Many cases of early vomiting in infants are due to congenital duodenal atresia and, unless operation is done promptly, death is inevitable.—Walker, et al, *Virginia M. Monthly*, June '35.

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VITAMIN A AND THE COMMON COLD

"Vitamin A is often called the anti-infective vitamin, and this anti-infective value is believed to be especially operative in the prevention of bacterial invasion of mucous membranes. Because of this alleged protective value, substances containing this vitamin are being advocated extensively, without adequate experimental proof, for prophylaxis against the common cold. The common cold and its complications are of such great importance that it seemed desirable to determine whether or not the addition of vitamin A to the diet has any effect on the prevention, duration and severity of this disease." These are the opening sentences from the recently published work of Shibley and Spies¹ in which they attempted to discover how much, if any, effect vitamin A has on the incidence, severity and duration of colds.

The material upon which their study is based consisted of a group of medical students and physicians, student and graduate nurses and hospital technicians, who were under observation for a period of fifty-six weeks. Two hundred forty-one began the

experiment and 211 saw it through. Only these latter were included in the final tabulations. One-third of the persons undergoing these experiments were women, and the mean age of all was twenty-four years. They were divided into three equal divisions. Group A received halibut liver oil; group B received the viosterol equivalent of the halibut liver oil administered to group A; and group C received plain maize oil. "Special efforts were made to have individuals taking part in the experiment ignorant of their group in order to prevent a prejudiced point of view. To aid in this, the material was well disguised in a small amount of tomato juice (which contains only a little vitamin A). In view of the well recognized fact that vitamin A is stored for some time in the tissues of animals and man, the material was given, for greater convenience, weekly rather than daily. Each weekly dose contained 20,000 international units (I. U.) of vitamin A and definitely exceeded the usual amount taken in a week when the vitamin is prescribed on the customary daily basis."

The authors state that "for this study we include mild to moderately severe infections of the upper respiratory type usually called 'common cold', characterized by definite coryza, rhinitis and nasopharyngitis." The subjects were seen once a week or more often and an accurate record of their condition was kept for fifty-six weeks. The conclusions reached were: "It has been shown that vitamin A in the form of halibut liver oil may be administered effectively in large single weekly doses. Vitamin A has no effect on the incidence or severity of colds. Suggestive but not conclusive evidence indicates that vitamin A shortens colds slightly in the winter months."

The painstaking and thorough work of the Cleveland investigators is sufficient to give us pause. Everyone knows that cod liver oil has been used beneficially for more than one thousand years and, more recently, halibut liver oil has come upon the scene. So much propaganda has appeared and so many false or exaggerated claims for these oils have been made that the real truth as to their great value is in danger of becoming obscured. Certainly it would seem that the inclusion of fish liver oil in cough drops and cough syrups is going entirely too far

1. Shibley, Gerald A., and Spies, Tom D.: The effect of vitamin A on the common cold, J. A. M. A. 103: 2021 (Dec. 29) '34.

and is quite uncalled for. More judgment and discrimination by physicians in prescribing vitamins and more investigations similar to those of Shibley and Spies will go far toward substituting fact for fiction and legend.

THE ANTITOXIN TREATMENT OF ERYSIPELAS

"Until Birkhaug, in 1926, obtained a specific toxin from the hemolytic streptococcus of erysipelas and showed that in turn it could be neutralized by an antitoxin, the treatment of erysipelas had been on an unscientific basis. Attention was focused on the rash, and local remedies were legion. It was established that none of the ointments, lotions, irritants or dyes had the least effect in controlling the disease. The fact that erysipelas is a constitutional disease, that it is caused by a specific micro-organism and that the rash is a local manifestation seemed to be lost sight of even after the science of bacteriology had been founded."

"In May, 1927, we began to employ an . . . antitoxin . . . with results that could not fail to impress us. Patients with a rapidly spreading rash and a temperature of 104° to 105° F. would show fading of the rash and decline of temperature to normal in from one to three days."

Thus do Symmers and Lewis¹ begin their excellent article on the use of antitoxin in this widespread infection. Their report is based on a series of 4,698 patients with erysipelas at Bellevue Hospital, New York City, and covers the period of time from 1927 to 1934. The authors admit that the severity of erysipelas may vary from year to year, but also insist that seven years of successful treatment with antitoxin is sufficient time to discount such variation. They strongly recommend the intramuscular administration of the antitoxin, because their results have been satisfactory and because several severe reactions were experienced when the intravenous route was used. "We administer 10 cc. of the concentrated anti-

toxin intramuscularly as soon as the patient is admitted to the hospital and we repeat this dose every eighteen to twenty-four hours, depending on the severity of the disease, until the desired effect is obtained. If, after six injections, there is no improvement, we discontinue the use of the antitoxin. Our criteria for judging the effect of the medication are fall in temperature and fading of the rash, which also ceases to spread." The authors report a number of failures which they believe were due to procrastination in using the antitoxin, and they are careful to add that there are other factors which affect the results, such as infancy and childhood, old age, alcoholism, drug addiction and severe debility from any cause. They also remind us that "the streptococcus of erysipelas is a micro-organism of different strains" and that an effort is made to incorporate in the antitoxin as many representative strains as possible.

"We have found that there are approximately five out of every hundred patients in whom erysipelas antitoxin is of no value." On the other hand, it was found that the average duration of the disease had been reduced by 60 per cent in the group treated with serum and the mortality had been reduced from 10.1 to 7.2 following the introduction of a specific antitoxin. In infants especially gratifying results were obtained, the mortality rate being reduced from 47.5 per cent to 14 per cent.

Most physicians who have struggled with erysipelas in the days before antitoxin will agree with the conclusions of Symmers and Lewis. Enough time has elapsed to prove the substantial value of erysipelas antitoxin as a means of lessening death and suffering, and it is good to realize that yet another of mankind's plagues is, in great part, being robbed of its terrors through the continued advance of science.

One-Sided Education.—The friends of obligatory prepayment for sickness cannot be denied the right to secure time on the air and broadcast their theories. When they attempt to conceal their one-sided propaganda beneath the cloak of education, however, they are guilty of a serious and dangerous deception. These are the instructional methods of dictators, and not of educators.—*Editorial*, *New York State J. Med.*, May 15, '35.

1. Symmers, Douglas, and Lewis, Kenneth M.: The antitoxin treatment of erysipelas with observations on 4698 patients so treated, *Med. Clinics of North America*, 18: 861, Nov. '34.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

RABIES IN ALABAMA AND ITS COST

The incidence of rabies is definitely on the increase in Alabama and at such a rate as to demand serious consideration at the hands of the legislature. Below are given the figures, by calendar years since 1929, for heads examined, treatments distributed and estimated cost of the service if purchased:

Calendar Year	Heads Examined	Treatments Distributed	Estimated Cost Of Service If Purchased
1929	1,136	1,525	\$18,300.00
1930	1,105	1,785	23,420.00
1931	1,255	1,667	20,000.00
1932	1,685	3,676	42,443.00
1933	1,631	3,518	26,587.00
1934	2,353	5,514	43,084.00

For the fiscal year 1933-1934, after a special appropriation had been made by the legislature to care for this particular service, the amount actually spent was \$20,000.00. This was due to the uncertainty of the amount that would be made available, thus causing a retrenchment in personnel and materials.

In 1932 the number of heads examined increased by 400 over the previous year and treatments more than doubled. In 1934 the heads increased by 600 and treatments distributed amounted to 2,000 more than the preceding year. From present indications there will be more treatments given this year than last. And this, in spite of the fact that Birmingham, where approximately one third of the treatments were administered last year, passed a dog ordinance effective January 1st, 1935, requiring licensure and vaccination. There, a decrease of 80 per cent in total heads examined and 70 per cent in treatments issued for the first two months of this year as compared with the first two of last year has been noted. This indicates very definitely that other sections of the State are becoming badly infected. In certain counties where rabies

was practically unknown heretofore, they have had a series of mad dog epidemics occurring at regular intervals. These epidemics will continue until drastic measures are taken to curb the dog population.

When the deaths from human rabies by years are compared with the total treatments distributed it will be seen that the mortality rate is exceedingly low among those exposed. However, rabies is a disease for which, when once developed, there is absolutely no cure, the mortality being 100 per cent. For this reason the only protection for any human being when bitten or exposed to a mad dog is the administration of the vaccine. Undoubtedly some vaccine is given unnecessarily, but the horrible character of the disease when it appears and the certainty that death will ensue makes such a procedure imperative in most cases. With rabies as prevalent as statistics demonstrate, there is little doubt as to the efficacy of the human vaccine when given sufficiently early. The deaths by years are given below:

1929	1
1930	3
1931	3
1932	2
1933	5
1934	3

In considering the cost of rabies to the State of Alabama, the figures given above are self evident. Actual expenditures for the rabies service for the ten-year period, October 1, 1922-October 1, 1932, when the State began the production of the vaccine, were \$225,042.04.

A CORRECTION

The second line in contribution "Importance Of Reporting Communicable Diseases," page 404, May Journal, should read: "The collection of the statistical data is dependent on the acquisition of the data and the acquisition is dependent on the giving of the data."

BUREAU OF LABORATORIES

James G. McAlpine, Ph.D., Director

TUBERCULIN

For some time the Bureau of Laboratories has been supplying the various County Health Officers and practicing physicians of this State with tuberculin and the necessary diluents. This product is the "Old Tuberculin" and is being furnished in small ampules each containing one cubic centimeter. In separate packages three 10 cc. ampules with carefully measured quantities of sterile, normal saline for making dilutions of 1:100, 1:1000 and 1:10,000 are supplied.

Old Tuberculin in its concentrated form is a relatively stable product and will maintain its potency for long periods of time. It is usually dated for seven years and most probably will be suitable for use several years longer. However, when it is diluted for the intradermal test, especially with normal saline containing no antiseptic, its potency rapidly diminishes. Although some authorities disagree, the general advice given by the Bureau of Laboratories is to discard all diluted material after ten days to two weeks, regardless of the fact that it has, or has not, been kept on ice. This appears to be a safe rule to follow since the rate at which the potency diminishes is uncertain, due to various factors.

On the other hand it is unnecessary to discard the remaining concentrated tuberculin contained in the small ampule. Since only one-tenth of a cubic centimeter is used in making a set of dilutions, there is sufficient in each vial for ten sets of the diluted material. Packages containing the three ampules of sterile, normal saline can always be obtained from the Bureau of Laboratories. Since tuberculin is expensive to manufacture or purchase on the open market, every effort should be made to conserve it.

Of late considerable information has appeared on P. P. D. or the Purified Protein Derivative which has been substituted in many places for the Old Tuberculin. This has been put up in tablet form making it much more convenient for field and office use. It is, however, more expensive than Old Tuberculin. Furthermore, all available

data seem to indicate that the difference in sensitivity between P. P. D. and Old Tuberculin is very slight. For that reason it has seemed inadvisable to change to the tablet form of P. P. D. at this time when the cost would be greater.

BUREAU OF PREVENTABLE DISEASE CONTROL

D. G. Gill, M.D., Director

A FEW FACTS ABOUT TUBERCULIN TESTING

Tuberculin testing, used as an aid to diagnosis in tuberculosis, is perfectly safe and does not cause any flare-up of latent or arrested tuberculous lesions.

The Mantoux or intradermal method of tuberculin testing is preferable to other methods because a measured dose can be given and quantitative readings made. A 26-gauge needle is used at a 15° angle and the needle opening barely buried so as to stay between the skin layers. If the patient can make several trips and will submit to repeated skin tests, the 1-10,000 dilution of tuberculin should be used first and if this proves negative the 1-100 dilution can then be given. If only a single test is contemplated, the 1-1000 dilution of tuberculin should be used. This dilution shows up over ninety per cent of the ultimate reactors, whereas the 1-10,000 dilution gives only about sixty per cent of the ultimate reactors. The 1-1000 dilution may cause a bit more local reaction, but is safe even as a first test.

The reading of the tuberculin test should be made in forty-eight hours. This allows time for traumatic inflammation to disappear and adequate time for the specific protein reaction to develop. The area of edema and not the area of erythema is read. These arbitrary standards were set for reading degree of reaction:

Edema of less than 1 cm. in diameter to be read as one plus (+).

Edema of 1 to 1.5 cm. in diameter to be read as two plus (++).

Edema of over 1.5 cm. in diameter to be read as three plus (+++).

Vesiculation or slough to be read as four plus (++++).

The administration of the new Purified Protein Derivative by the Mantoux method is similar to that of Koch's Old Tuberculin and the reading time and standards are the same.

A positive tuberculin test signifies that an anatomic tubercle has developed somewhere in that individual's body and that the tuberculo-protein therefrom has sensitized all the cells of the body. It is generally believed that viable tubercle bacilli must remain somewhere in the body to maintain a positive tuberculin test.

It is well to always advise the patient or his parents of the significance of the tuberculin test so that misunderstandings and unnecessary worry will not result. *The tuberculin test in itself does not diagnose tuberculosis.* Positive reactors should be studied with the x-ray to determine the presence or absence of demonstrable pathology.

It is true that the stronger reactors will show up with x-ray evidence more frequently than the weaker reactors, but many four plus reactors prove to have no x-ray evidence of disease, while some one plus reactors have definite clinical tuberculosis. Therefore, all positive reactors should have further study (preferably x-ray).

It has been shown in infants that the tuberculin reaction can develop in less than three weeks.

The tuberculin test can wane so that in a few cases a positive test becomes negative. Such cases are either in the advanced stages of tuberculosis and their cells have lost their power to give an allergic response or the lesions have completely healed, with death of all tubercle bacilli. These latter cases are referred to as obso'ete lesions.

In rural areas the percentage of positive reactors is much less than in urban groups. This means that tuberculin testing in such areas is worthwhile even in adults.

The tuberculin test is used to screen cases that give a contact history and those that have only vague chest symptoms. If definite chest pathology is present, but atypical, a negative tuberculin test will rule out tuberculosis. In such cases a positive test does not necessarily mean that the condition is tuberculous.

Large surveys in rural school groups show less than five per cent positive in pre-

school ages and about eighteen per cent positive in the high school group.

In tuberculin testing several thousand people of all ages in Alabama, Aronson found sixty-five per cent of the negroes positive and sixty-seven per cent of the whites positive.

Several positive reactions in one family group of children should cause the physician to suspect an open case of tuberculosis in that family.

Always be prepared to follow the tuberculin test with x-ray studies so as not to keep the patient in suspense regarding his ultimate diagnosis.

R. A. B.

THE PRINCIPLES OF TREATMENT OF EARLY SYPHILIS

(Continued from the May Issue)

1. Do not use the blood test as a guide to infectiousness. Infectiousness is determined by: (a) the nature of the case for there are chronic relapsers; (b) time [the first two years after treatment stops are the dangerous ones]; (c) treatment [a minimum requirement of not less than 20 neoarsphenamine and 20 bismuth injections].
2. A spinal fluid examination is desirable at the end of six months and essential, especially if the blood test has shown abnormal behavior, before all treatment is stopped.
3. Marriage should be discouraged within three years of the infection and pregnancy within five years even in "favorable" cases.
4. Twenty to twenty-five per cent of failures are to be expected in fully developed infections and average material.
5. Never dismiss a patient as cured for there are no criteria of cure. Instruct him to watch the skin and mucous membranes for recurrences. The physician should examine frequently the blood, mucosae and skin in the first two years after treatment stops. A spinal fluid examination should be made one year after the first. Make a yearly physical examination of the cardiovascular and nervous systems for as long as possible. Physical signs may be only indication of involvement of these systems.
6. The syphilis of tomorrow is the ineffectively treated syphilis of today.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

MUNICIPAL SANITATION

The problem of the disposal of the body wastes of individuals who constitute the population group of any town or municipality is one which is complicated by topography, density of population and economic status of the component groups and individuals. If this problem is to be satisfactorily solved, these various factors must be clearly recognized by the governing bodies.

If economics could be disregarded and Utopia reached, sewers would be built to serve each individual house, and each house would be served from the general water supply. Unfortunately, this can not be done. It is done in certain areas and the general but erroneous impression is that the whole problem of disposal has then been solved.

As a sewer system must be built largely as a system and not in pieces to serve each parcel of property, the usual practice is for the organized government to use its authority and finance the trunk and lateral system, distributing the charge to the property served and easing the capital outlay by permitting deferred payments. In order to make use of such mains the property owner must install the necessary plumbing and fixtures. In addition, it must bear the initial expense of water connections and the monthly charge for the water used. Some properties in such districts have been further accommodated by deferred payments for plumbing through municipal financing made possible by the passage of an act by the 1927 Legislature, and by financing through the public water supply for water connection.

There will be found in practically all municipalities property located on sewers already built; also, other property where sewers have not been built, probably for the reason that this property can not bear the charge of an operating sewer connection. The waste disposal problem is none the less pressing at such properties. The tendency has been for the municipality to consider this problem as belonging entirely to affected property. No organized means of financing has been provided these citizens

to enable deferred payments. Where the problem has been recognized as one of government, the police power has been applied on those conceivably least able to meet the capital outlay called for. The construction of the sanitary privy system to supplement the sewer system as an integral part of the municipal problem has, where accomplished, been left to the individual property owner, and to the health department. The health department has been handicapped in attempting to build and maintain a privy system, working only under the police powers and lacking the full powers of finance granted the municipal government.

The third element in the municipal disposal problem is found where sewers have not been built or where connection is physically impossible, but largely where the property is served by the public water supply. Here the wastes must be disposed of through the water-carried method, but instead of piped removal they must be absorbed in the ground. Such individual plants constituting a part of the system have, without full consideration, been regarded by the municipality largely as a police matter between the property owner and the health department.

It appears that the first step toward the satisfactory solution of this body waste disposal problem is for the governing bodies to recognize that the problem is divided into these three parts, and that sewers alone, no matter how extended, will not adequately serve to solve the whole problem; secondly, that the governing bodies recognize the problem as theirs and attempt to grant to all property equal facilities within their powers.

It would appear that the time is opportune for the municipalities to give serious consideration to solving their feces disposal problem in its entirety. As all types of installations and connections are an integral part of the problem and supplementary to the sewer system, it is felt that such improvements can be made fully self-liquidating as expenditures and interest charges may be made a direct lien on the property. The number of deferred payments could vary as the permanency of the installation is considered.

Such being the case, it would seem that the municipalities should make an effort to

secure funds under the new Federal bill which is to provide funds for various purposes. The State Department of Health has foreseen the possibilities and has advised the State Planning Board that, in its opinion, the municipalities could profitably use for sanitary pit privy construction alone above two million dollars. G. H. H.

BUREAU OF VITAL STATISTICS

Leonard V. Phelps, Director

REVIEW OF VITAL STATISTICS FOR THE YEAR, 1933

(Taken from the Annual Report of the Bureau of Vital Statistics, 1933:
Published May 1935)

In 1933, there were recorded 59,240 births, which was four thousand less than in the preceding year; the birth rate, 21.6 per 1,000 population, was the lowest ever recorded since Alabama was admitted to the Birth Registration Area in 1927. The trend in the birth rate has been downward since that year.

Although a continued reduction in the birth rate may have been anticipated, because of the present economic depression, it may not have been expected of the death rate. There were 27,129 deaths; the death rate, 9.9 per 1,000 population, is a new minimum. The trend has been downward since 1929.

It must be remembered, however, that the effect of an economic depression upon mortality may not be immediately apparent. It is not possible to state to what extent the increased efforts of official and unofficial health agencies have had in reducing the rate. It is apparent at the date of this writing that both the death and birth rate for 1934 will be higher.

The stillbirth rate continued its decline for the fourth consecutive year since 1929; the rate in 1933 was 45.4 per 1,000 total births.

The maternal mortality rate, 69.1 per 10,000 total births, has never been lower.

Death rates from typhoid and paratyphoid fever, diphtheria, tuberculosis, pneumonia, nephritis, appendicitis and accidents reached a new low point since 1925 when Alabama was admitted to the Death Registration Area. The rate from diarrhea and enteritis (under two years) has, with the

single exception of 1932, never been lower. Only once during the past nine years have the rates from influenza, bronchitis and whooping cough been lower, and twice from measles. Mortality rates from scarlet fever and suicide are the lowest recorded in five years; the rate from cerebral hemorrhage in six years.

New maximum rates were established by cancer and homicides. Mortality from heart disease was higher than in 1932 and the rate from diabetes was only slightly lower than the high records of 1931 and 1932.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	March	April	Estimated Expectancy April
Typhoid	11	16	26
Typhus	7	3	5
Malaria	201	264	85
Smallpox	4	15	28
Measles	2142	1483	904
Scarlet fever	54	30	61
Whooping cough	247	210	192
Diphtheria	53	42	51
Influenza	2477	351	812
Mumps	135	122	159
Poliomyelitis	1	2	2
Encephalitis	4	1	2
Chickenpox	365	197	201
Tetanus	4	7	4
Tuberculosis	310	379	361
Pellagra	41	52	59
Meningitis	15	14	8
Pneumonia	832	471	389
Syphilis (private cases)	462	273	165
Chancroid (private cases)	7	9	10
Gonorrhea (private cases)	316	269	152
Ophthalmia neonatorum	0	2	1
Trachoma	2	0	0
Tularemia	3	5	0
Undulant fever	4	3	0
Dengue	0	0	0
Amebic dysentery	2	0	0
Rabies	0	1	0
Positive animal heads	114	99	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

DOCTOR GEORGE H. SEARCY

In the death of Doctor George H. Searcy on May 6th, Tuscaloosa and Alabama has lost one of its most prominent and useful citizens and the medical profession of the country has lost one of its most distinguished members. Doctor Searcy, a native of Tuscaloosa, Alabama, was a son of a distinguished father, and in every way his life

was worthy of his heritage. His father, Doctor James T. Searcy, was a native of Tuscaloosa, Alabama, was a most distinguished physician and specialist in psychiatry, having long been Superintendent of the Alabama Insane Hospitals and at one time President of the American Psychiatric Association. Doctor George inherited many of his father's strong and unusual qualities. He was highly educated and trained in his profession, served for a time on the staff of the hospital at Mount Vernon which bears his father's name, was one of the first small assignment of six physicians to accompany General Gorgas to the Canal Zone to improve sanitation and health conditions there in order that men might live while the Panama Canal was being constructed. He later, after special preparation, located in Tuscaloosa, specializing in surgery. His career in his profession was most successful.

Doctor George, as he was familiarly known to his friends, found time outside of his busy professional duties and responsibilities to be of unusually active service in connection with every good movement. He was interested in promoting interracial harmony, benevolent enterprises, such as antituberculosis work, and often headed up such movements of his own initiative. He was a man in whom every citizen had the utmost confidence morally and intellectually. He at once commanded the respect, love and confidence of all who knew him and this was particularly observed in the reassurance all of his patients felt. His very presence at once made his patients feel reassured and confident in their love for their physician.

Doctor Searcy had an inquiring mind and it was through his hunger for knowledge and research that he recognized, described and named first of all physicians in America the malady pellagra. He was a loyal member of prominent medical organizations, including his local medical society, the Alabama Medical Association, the American Medical Association, the American College of Surgeons, and others. He was distinguished in the State Medical Association of Alabama, being a member of the State Board of Censors and the State Committee of Public Health. He was for many years a member and Secretary of the Board of Trustees of the Alabama Insane

Hospitals and of the Board of Managers of the Partlow State School. In these institutions he not only had the usual passive interest of members of a board but was actively interested and useful, loyally serving and wisely counselling. He will be missed not only by his family and relatives, whom he worshipped in his home life, but by his great number of affectionate patients and friends and the medical profession of the country.

DOCTOR M. E. DOUGHTY

Doctor Mordecai Edward Doughty was born in Tuscaloosa County, July 3, 1875. His father was James Mordecai Doughty, and his mother, Nancy Hazeltine Hinton. He was the oldest of six children.

He graduated from the West Alabama Agricultural School at Hamilton in 1899. As a student of medicine he spent one year in the Birmingham Medical College, one year at the University of the South at Sewanee, Tennessee; and in 1903 was awarded his M. D. degree from Grant University at Chattanooga, Tennessee. He had practiced medicine at Slocumb, Alabama, for more than thirty years where he lived at time of his death, February 3rd, 1935. He was Secretary-Treasurer of the Geneva County Medical Society at time of his death, and had been for several terms. He was an Active Counsellor of the Alabama State Medical Association, and a member of the Slocumb Baptist Church. He is survived by his wife and one son.

Resolved, That in his passing, Geneva County has lost a good citizen, the Geneva County Medical Society, a loyal and faithful member, and that we extend our sympathy to the bereaved family;

Resolved further, That a copy of these resolutions be spread on the minutes of the Geneva County Medical Society, one sent to the family and one sent to The Journal of the Alabama Medical Association for publication.

Signed:

L. S. NICHOLS,
E. T. BRUNSON,
G. H. HERRING,
C. P. GAY,
Committee.



Book Abstracts and Reviews

The Crippled and The Disabled, by Henry H. Kessler. Columbia University Press. New York. 1935. Cloth. 337 pages. Price \$4.00.

The experiments in sociology sponsored by the "New Deal" have brought to our attention many important facts and have disproved many of our old pet theories. Literally swamped by the problems of the unemployed, we have lost sight of the smaller but more permanent problem of the physically handicapped. As the author presents his material dealing with the crippled child, the disabled veteran and those injured in industry, two things become obvious—one, that early detection of disabling conditions with prompt institution of adequate medical and surgical care, combined with scientific rehabilitation is more humane and more economical than allowing the handicap to progress to a state of total incapacity; two, that the day of private charity is a thing of the past and that certain fundamental welfare standards must be furnished by the state or federal government and must be financed by taxation.

In every county in the State of Alabama there are a certain number of unemployable persons who were objects of charity before the depression and will remain so afterwards. The full financial responsibility of the care of these families will remain permanently the responsibility of the public. Prevention of disability, re-education and rehabilitation might have made some of these people wholly or partly self supporting at a decided economic saving to the public. Since the doctor of the future must be social-minded, it would be well worth his while, if he is a leader in his community, to familiarize himself with the contents of this book.

C. K. W.

The 1934 Year Book of Dermatology. Edited by Fred M. Wise, M. D., Professor of Dermatology and Syphilology, New York Post-Graduate Medical School of Columbia University, and Marion B. Sulzberger, M. D., Associate in Dermatology and Syphilology, New York Post-Graduate Medical School, Columbia University. The Year Book Publishers. 1934. 725 pages. Illustrated. Price \$3.00 net.

The new Year Book of Dermatology is larger and more comprehensive than in previous years.

The outstanding article is one dealing with the treatment of early syphilis, including the most recent experience and conclusions of our outstanding syphilologists. It is an appeal for adequate treatment by the general practitioner.

There are articles on mycotic infections, allergy and immunity, the varicose symptom-complex, miscellaneous dermatoses, cancer and other tumors and chronic granulomata. There are articles on therapy, physical therapy and experimental studies.

The advance in the field of syphilis is the outstanding contribution of the year.

The busy practitioner can quickly cover the entire field of dermatology in a few nights' study by use of this Year Book.

H. G.

Year Book of Obstetrics and Gynecology, 1934. Obstetrics, edited by Joseph B. DeLee, M. D., Professor of Obstetrics, University of Chicago. Gynecology, edited by J. P. Greenhill, M. D., Associate Professor of Gynecology, Loyola University Medical School. The Year Book Publishers, Chicago, Ill. 625 pages. Illustrated, 1934. Cloth. Price \$2.50 net.

From eighty scientific publications, the authors have abstracted 652 articles as the most valuable contributions in the field of obstetrics and gynecology. Appended to these abstracts are many personal comments by the editors—some brief and exclamatory, others detailed and descriptive.

From Germany and Italy comes a new hormone test. There is a new classification of pelvis profusely and beautifully illustrated. There are practical contributions on the subject of occipito-posterior and breech presentations. There is a reference to thyroid medication in threatened and habitual abortions. There are splendid summaries on the newer analgesics and prevention of weight loss in the newborn and a symposium on the toxemias of pregnancy which should be read by every physician. There are several very interesting articles on sterility, the newer knowledge of menstruation, contraception and the safe period, leucorrhea and trichomonas infection.

Anyone wishing to keep up with the scientific advances in the field of obstetrics and gynecology during the past year will find this a most practical volume. The illustrations are exceptionally well reproduced.

A. E. T.

Truth About Medicines

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Diphtheria Toxoid.—For determining sensitivity to diphtheria toxoid (New and Nonofficial Remedies, 1934, p. 392) the product is supplied in the form of a 1:20 dilution. Supplied in packages of five and fifty tests. The National Drug Company, Philadelphia.

Diphtheria Toxin for Schick Test in Peptone Solution (New and Nonofficial Remedies, 1934, p. 405).—Also marketed in packages of one vial containing diluted diphtheria toxin sufficient for fifty tests. Lederle Laboratories, Inc., Pearl River, N. Y.

Staphylococcus Toxoid.—Staphylococcus Anatoxin.—Univalent or polyvalent, potentially hemolytic and dermonecrotic toxins of Staphylococcus pyogenes-aureus altered by the formaldehyde-detoxifying process of Burnet (modified from Ramon). Staphy-

lococcus toxoid has been reported a valuable agent in the prophylaxis and therapy of various staphylococcal pyodermas and localized pyogenic processes due to *Staphylococcus aureus* (boil, carbuncle, furunculosis, acne, and so on).

Staphylococcus Toxoid-Lederle.—Prepared by treating a staphylococcus toxin filtrate with 0.3 per cent solution of formaldehyde and storing at 37-38 degrees C. until 0.1 cc. injected intradermally into previously tested rabbits produces no evidence of necrosis. The product is then diluted with 0.25 per cent peptone solution so that two strengths are obtained. The material is then preserved with merthiolate 1:10,000. The product is marketed in packages of one 5 cc. vial, each cubic centimeter containing the toxoid derived from 100 necrotizing doses of toxin; and in packages of one 5 cc. vial, each cubic centimeter containing the toxoid derived from 1,000 necrotizing doses of toxin. Lederle Laboratories, Inc., Pearl River, N. Y. (Jour. A. M. A., February 16, 1935, p. 562.)

Alurate.—Allylisopropylbarbituric acid.—Alurate differs from barbital (diethylbarbituric acid) in that both of the ethyl groups of the latter are replaced, one by an allyl group and the other by an isopropyl group. The actions and uses of alurate are essentially similar to those of barbital, but it is more active than barbital and is used in correspondingly smaller doses. It is supplied in the form of alurate tablets, 1 grain, and elixir alurate. Hoffmann-La Roche, Inc., Nutley, N. J.

Sodium Alurate.—Sodium allylisopropylbarbiturate.—Sodium alurate differs from soluble barbital U. S. P. (sodium diethylbarbiturate), in that both of the ethyl groups of the latter are replaced, one by an allyl group and the other by an isopropyl group. The actions and uses of sodium alurate are essentially similar to those of barbital. The soluble sodium salt is intended for oral or rectal administration, particularly as preanesthesia medication. It may also be used in other cases in which large individual doses are required. The product is supplied in capsules sodium alurate, 3½ grains. Hoffmann-La Roche, Inc., Nutley, N. J.

Diothane Ointment 1% in Ophthalmic Tube.—Collapsible tubes containing an

aqueous solution of diothane (The Journal A. M. A., December 8, 1934, p. 1777), 1 per cent, in an oxycholesterin base. The Wm. S. Merrell Company, Cincinnati, Ohio.

Neo-Synephrin Hydrochloride Jelly.—Neo-synephrin hydrochloride (The Journal A. M. A., June 16, 1934, p. 2024), 0.5 per cent, incorporated in a jelly-like bland base composed of tragacanth, chondrus, glycerin and water. Sodium benzoate 0.5 per cent is present as preservative. It is supplied in collapsible tube containers. Frederick Stearns & Co., Detroit, Michigan.

Dilaudid Compounding Tablets ½ Grain.—Each tablet contains dilaudid (The Journal A. M. A., June 16, 1934, p. 2024; December 1, 1934, p. 1708) one-half grain. These tablets are for use in compounding only. Bilhuber-Knoll Corporation, Jersey City, N. J. (Jour. A. M. A., February 23, 1935, p. 641.)

ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following apparatus have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

Burdick Nasal-Catheter Oxygen Humidifier.—The purpose of this instrument is to add moisture to oxygen while the patient is receiving oxygen therapy through a nasal catheter. This form of treatment is indicated in cases of pneumonia, pulmonary edema, shock following major surgical procedures, postoperative pneumonia, angina pectoris, asthma, and other conditions in which anoxemia or cyanosis is present. Burdick Corporation, Milton, Wis.

Heidbrink Kinet-O-Meter.—This is a gas-oxygen anesthesia apparatus. It consists of four entirely separate and removable tank pressure regulators for controlling the contents of two tanks each of oxygen, carbon dioxide, nitrous oxide and ethylene. Each regulator is equipped with a 3,000 pound gauge to register the pressure in the tanks attached thereto. The whole machine, with the exception of the soda lime tank, can be taken apart and disinfected. Heidbrink Company, Minneapolis.

Victor Micro-Surgical Diathermy Unit.—This unit is intended for surgical use only. It is designed primarily for electric coagu-

lation and electric desiccation but can also be used by certain specialists for straight diathermy to some parts of the body, such as the head, sinuses, ears and eyes, whenever such treatment is indicated. The General Electric X-Ray Corporation, Chicago. (Jour. A. M. A., February 2, 1935, p. 397.)

Sonotone Hearing Aid.—This outfit consists of a transmitter, booster, ear or bone conduction receiver, and a battery. The principle of operation does not differ greatly from a simple telephone hook-up. When tried out in actual service, it was found that both the air conduction and bone conduction instruments gave satisfaction; the selection of the method depends on the conditions of the case. Sonotone Corporation, New York City.

Aloe Double Therapy Lamp.—This unit is called a double therapy carbon arc ultra-violet lamp, because it is possible to make use of the various kinds of carbon, for example, the A Sunshine Carbon, the C therapeutic carbons and the K carbons. It combines in one unit a carbon arc and a ring type infra-red generator. The mechanism of the unit is so arranged that either the carbon arc or the infra-red burner may be used independently of the other or the two units may be used simultaneously. A. S. Aloe Company, St. Louis, Mo. (Jour. A. M. A., February 16, 1935, p. 562.)

PROPAGANDA FOR REFORM

Advertising Dealing with Treatment of Disease or the Nutrition of the Sick, or Recommending Any Special Type of Diet.—The Committee on Foods reports that advertising dealing with treatment of disease or the nutrition of the sick, or recommending any special type of diet should be directed exclusively to physicians and, when not a part of medical publications, should conspicuously bear the phrase "~~For physicians only~~" or its equivalent. (Jour. A. M. A., February 2, 1935, p. 398.)

Fortification of Foods Other Than Dietary Staples with Vitamin D.—The Committee on Foods reports that there is no convincing evidence from the standpoint of public health of a need for the fortification of foods with vitamin D other than such staple products as milk, cereals and bread, which form the basis of the customary diet of the public throughout the year. Exam-

ples of foods not warranting fortification with vitamin D are sausage and ice cream and such accessories as chewing gum. (Jour. A. M. A., February 16, 1935, p. 563.)

Thirtieth Anniversary of the Council on Pharmacy and Chemistry.—On February 11 the Council on Pharmacy and Chemistry completed its thirtieth year of service to the medical profession. For nearly a third of a century it has made contributions of inestimable value to rational therapeutics. Of the personnel of the Council, which serve entirely without remuneration, four members have been active ever since its organization in 1905. A comparison of the conditions prevailing in the marketing of drugs in this country before 1905 and those obtaining today indicates the debt that American medicine owes to the Council on Pharmacy and Chemistry. The rules governing the acceptance or rejection of remedies adopted in the beginning have gradually been amplified and clarified to meet new conditions. Advertising claims employed by manufacturers of pharmaceuticals for products accepted by the Council have attained standards of accuracy and truthfulness unequalled in any other field of marketing. The Journal A. M. A. and many other medical publications in this country, including the journals of all the state associations with the exception of Illinois, accept advertising for Council-accepted or official drugs only. But the Council's work would have come to naught had it not been for the militant aid of The Journal A. M. A. and the ever increasing support of the medical profession. Among the important contributions of the Council have been the evaluation of new drugs on the basis of available evidence, the publication of reports giving the results of this evaluation, the standardization with the assistance of the A. M. A. Chemical Laboratory of products that show promise of therapeutic usefulness, and the publication of special articles in review of subjects of current interest to the medical profession. In addition the Council issues several books: New and Nonofficial Remedies (revised yearly), Useful Drugs, the Epitome of the U. S. Pharmacopeia and National Formulary, and (in cooperation with the Council on Medical Education and Hospitals) Hospital Practice for Interns. It continues its important

tasks, ever increasing in number and volume, unselfishly and with intelligence and foresight. It merits unfailing support by the medical profession. (Jour. A. M. A., February 9, 1935, p. 478.)

Viosterol Preparations and Gallstones.—The widespread clinical administration of viosterol preparations has raised problems concerning several possible late effects and side actions. Among these questions is that of the formation of gallstones. Jones and Laing (Am. J. Physiol. 110:471 (Dec. 1) 1934) have recently undertaken to ascertain whether the current use of viosterol preparations might lead to an increased output of calcium in the bile in dogs. One hundred and ninety-three analyses of bile calcium before the administration of a viosterol preparation were made and seventy-three after the daily administration of from 5 to 10 cc. of viosterol in oil. From the results obtained by these investigators it was evident that doses of viosterol preparations considerably larger than would ordinarily be used in clinical practice do not raise the bile calcium concentration or modify bile output in the dog. Doses of viosterol preparations large enough to increase definitely the blood calcium level will increase the bile calcium concentration and decrease the output of bile. Jones and Laing hoped to obtain clinical confirmation on patients with chronic biliary fistulas but had not yet been able to do this. When and if confirmation is obtained, one more possible danger of viosterol administration will be eliminated. (Jour. A. M. A., February 23, 1935, p. 655.)

Claims for Anayodin.—A circular letter from Ernst Bischoff Company on Anayodin contains the following statement: "ANAYODIN comes nearest to being the ideal amebicide. It safely rids the intestinal tract of amoebae, usually with a single treatment of four pills three times a day for eight days." The statement is far too optimistic. There is no known amebicide that can be depended on to eradicate *Endamoeba histolytica* from the intestinal tract with a single course lasting eight days. Such propaganda is exceedingly unfortunate. Anayodin is a proprietary name for chiniofon—N. N. R. The Council on Pharmacy and Chemistry has considered Anayodin and found it unacceptable for New and Nonofficial Remedies. The Council has ac-

cepted the following brands of chiniofon: Chiniofon-Searle and Chiniofon-Winthrop. (Jour. A. M. A., January 12, 1935, p. 139.)

Kelvita Not Acceptable.—The Committee on Foods reports that the product Kelvita, manufactured by the California Kelvita Company of San Francisco, is, according to the package label, a mixture of dried kelp (a seaweed), wheat embryo and certain dried vegetables. There is nothing really unique or even extraordinary, nutritionally or otherwise, about this ordinary product. The ingredients, wheat embryo (a part of all whole wheat foods) and vegetables, are common market and table articles. The kelp, an unpalatable seaweed, has found no place in the American dietary; there is no authoritative information showing a need for kelp in the diet. The advertising is of the usual false "patent medicine," quackery type apparently intended to deceive the gullible, the sick, or those with imagined ills. Smatterings of facts are intermingled with falsehood, giving the entire copy a semblance of truth. Names of well known authorities are inserted to give confidence. The material is pseudo-scientific. The appeal of sex potency, the dread of its loss, are adeptly used to captivate the morbid. Advertising such as this is an example of the kind that is causing a growing public demand for federal legislation for the control of advertising in the interest of public welfare. The Committee on Foods vigorously opposes such deceptive advertising. (Jour. A. M. A., January 19, 1935, p. 219.)

Acidogen Nitrate.—According to the catalogue of the Abbott Laboratories, Acidogen Nitrate appears to consist of 3 grains of carbamide nitrate (urea nitrate) per capsule. Although the manufacturers propose the use of the preparation for "adjunct therapy in various allergic conditions; hay fever, hyperesthetic rhinitis, migraine, chronic urticaria, serum disease, allergic gastro-intestinal affections (diarrhea) and asthma with productive cough," critical textbooks of pharmacology which have been examined do not refer to such use of urea or nitric acid. Acidogen Nitrate Capsules have not been accepted for inclusion in New and Nonofficial Remedies nor has the Abbott Laboratories requested the Council to consider the product. (Jour. A. M. A., January 12, 1935, p. 139.)

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THE JOURNAL OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Volume 4

July 1934-June 1935

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Miscellany

ADVERTISERS' NOTES

PRESENT STATUS OF MEAD JOHNSON VITAMIN A RESEARCH AWARD

This award was originally established by Mead Johnson & Company January 30, 1932. "Mead Johnson & Company announces an award of \$15,000 to be given to the investigator or group of investigators producing the most conclusive research on the vitamin A requirements of human beings." (See J. A. M. A., January 30, 1932, pages 14-15.)

On February 11, 1933 (J. A. M. A., pages 12-13), "At the suggestion of the Judges, a second (additional) award of \$5,000 is now offered. The basis for this enlargement is in the obvious possibility that within the time limit set (Dec. 31, 1934), no suitable evaluation of the vitamin A requirements of human beings will have appeared. On the other hand, a laboratory investigation may have been published which will point the way toward clinical evaluation."

On that date, the Judges for the award were announced:

Isaac A. Abt, Northwestern University; K. D. Blackfan, Harvard University; Alan Brown, University of Toronto; Horton R. Casparis, Vanderbilt University; H. F. Helmholz, Mayo Clinic; Alfred F. Hess, Columbia University; E. V. McCollum, Johns Hopkins University; L. B. Mendel, Yale University; L. T. Royster, University of Virginia; and Robert A. Strong, Tulane University.

The Judges met in Detroit, April 10, 1935, and took the following action:

(1) To postpone until December 31, 1936, awarding of the main (clinical) award.

(2) To divide the second (laboratory) award, one-half to Dr. S. B. Wolbach, Harvard University, for his basic work on the pathology of avitaminosis A and his investigations on the regeneration of epithelial tissue impaired by vitamin A deficiency, and the relationship of vitamin A to the integrity of the teeth; and one-half to Dr. Karl E. Mason, Vanderbilt University, for distinguishing exactly between the pathology of avitaminosis A and avitaminosis E, and for his contribution to the quantitative relationship of vitamin A deficiency to the keratinization of germinal epithelia. Some of this original work is still in press.

Checks for \$2,500 each, in accordance with the decision of the Judges, were promptly mailed by Mead Johnson & Company to Dr. S. B. Wolbach and to Dr. Karl E. Mason.

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Though the booklet is small in size, it forms a very handy reference work to the busy practitioner and should be kept constantly on his desk. The book has been prepared by the R. B. Davis Company, the makers of Cocomalt, and may be secured without cost on request. Write to R. B. Davis Company, Dept. 000, Hoboken, N. J.

COCOMALT

A milk-drink that is especially valuable in the dietary of the malnourished, is Cocomalt. It is particularly fine for children, because it converts milk into a delicious, chocolate-flavor drink which youngsters look upon as a "treat." They drink far more milk when it is mixed with Cocomalt than they would in any other way.

Not only does Cocomalt make milk more palatable, it substantially increases its caloric value. Prepared according to the simple directions on the label, it adds 70% more caloric value to milk—so that every cup or glass of Cocomalt is equivalent in food-energy value to almost two glasses of milk alone. It is not at all uncommon for a malnourished, underweight child to gain a pound a week, and more, when Cocomalt is added to the diet.

THE NUTRITIONAL VALUE OF CHEESE

Cheese, like milk, is a dairy product of unique value in the diets of children and adults. Since this fact is not generally realized, and since the period from November 11th to 17th, 1934 was designated as National Cheese Week, scientific data on the nutritive qualities of cheese may be of particular interest at this time.

There are, according to Crumline and Tobey (*The Most Nearly Perfect Food*, 1929, page 185), more than 400 varieties of cheese, although only about 20 different kinds, which may be divided, roughly, into the hard and soft cheeses. In the former

class are Cheddar, Swiss, Edam, Roquefort, etc., while the latter includes cream, Brie, Camembert, Limburger, etc.

Although the composition varies, many cheeses have about one-third water, one-third fat, and one-fourth protein. The most common cheese, American Cheddar, averages 36% water, 34% fat, 24% protein, and 3.6% minerals. It yields 410 calories per 100 grams, or 1,860 to the pound.

Since cheese is rich in butterfat, it is an excellent source of vitamin A, a fact which has been demonstrated experimentally by Morgan (*Am. Jour. Physiol.* 78:11, Sept. 1926), who reports, however, that American Cheddar and Limburger are better sources of this vitamin than is imported Swiss cheese.

The protein of cheese consists mainly of the digested casein and to a less extent of the albumen of the milk, the high nutritive values of both of which are generally recognized. Sherman (*Food Products*, 1933) points out that a pound of cheese represents the casein and fat of a gallon of average whole milk.

Cheese is an excellent source of the indispensable minerals, calcium and phosphorus, although rennet-curd cheeses are much higher in these minerals than are those prepared from soured milk. Thus, Cheddar cheese has been shown by Blunt and Sumner (*Jour. Home Econ.* 20:587, 1928) to have 0.71% calcium, whereas cottage cheese has only about 0.08%. Tests by McCammon, Caulfield, and Kramer (*Jour. Dair. Sci.* 16:253, May 1933) indicate that the hard cheeses retain about 80% of the calcium of the milk, and the soft cheeses about 20%.

That the calcium of cheese is as well utilized as is that from milk has been demonstrated by Mallon, Johnson, and Darby (*Jour. Nutr.* 5:121, March 1932), who compared American Cheddar with pasteurized whole milk by means of metabolism tests on human adults.

"Without milk or cheese in the diet," says Bernheim (*Jour. Am. Med. Ass'n.*, 100: 1001, April 1, 1933), "it is difficult to obtain the needed calcium through food alone."

Contrary to much erroneous opinion, cheese is not difficult to digest. As pointed out editorially in the *Journal of the Ameri-*

can Medical Association (98:1657, May 7, 1932), "Many experiments undertaken in government laboratories have indicated the excellent utilization of cheese even when it is eaten in liberal amounts."

The Borden Company manufactures many kinds of cheese. Included in these quality products are Borden's American,

Pimento, Swiss, Brick, Limburger, Buffet, and Cream Cheeses; Military Brand Camembert, Brie, and Swiss Gruyere; Napoleon Brand Roquefort; Liederkrantz; Chatteau; Lakeshire; Anona; and Grated American and Italian Cheeses. All may be used with the usual confidence in Borden products.

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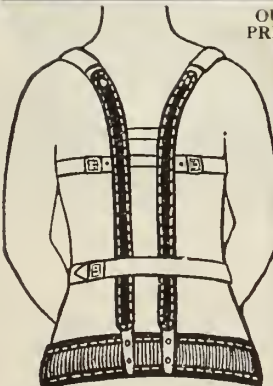
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Site High and Healthful

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Terms Reasonable

OTHERS ASK UP TO \$50.00

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A well padded surgical steel spinal support furnished with apron and perineal straps.

*Made to order
in 24 hours*

Take measurements around iliac crest, umbilicus, distance from sacro lumbar articulation to 7th cervical vertebra prominence.

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THIS HIGH GRADE
SACRO-ILIAC BELT

OUR PRICE **\$3.50**

Beautifully made of six inch orthopedic webbing, well reinforced, supplied with perineal straps.

Take measurements around the hips three inches below the iliac crest.

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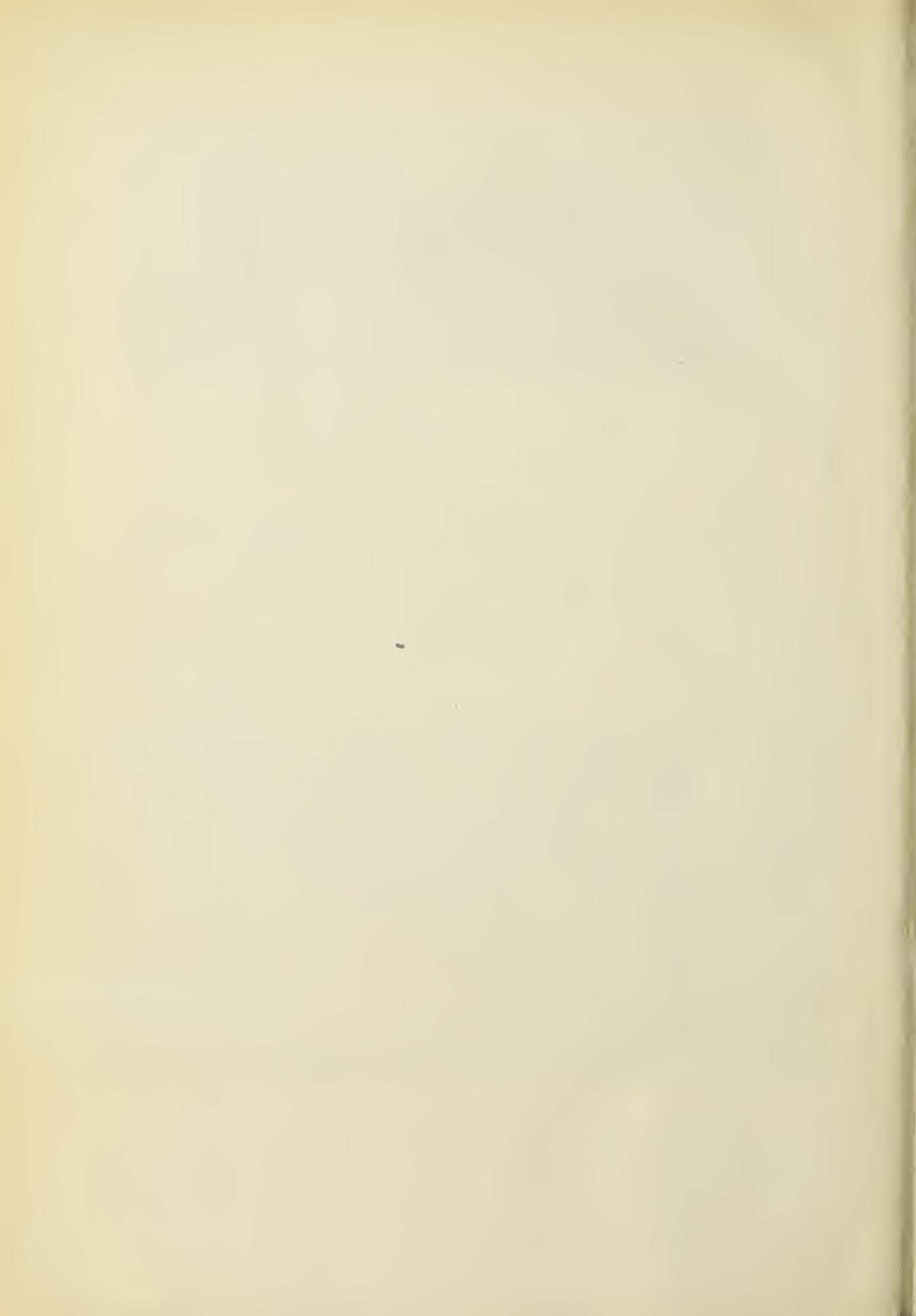
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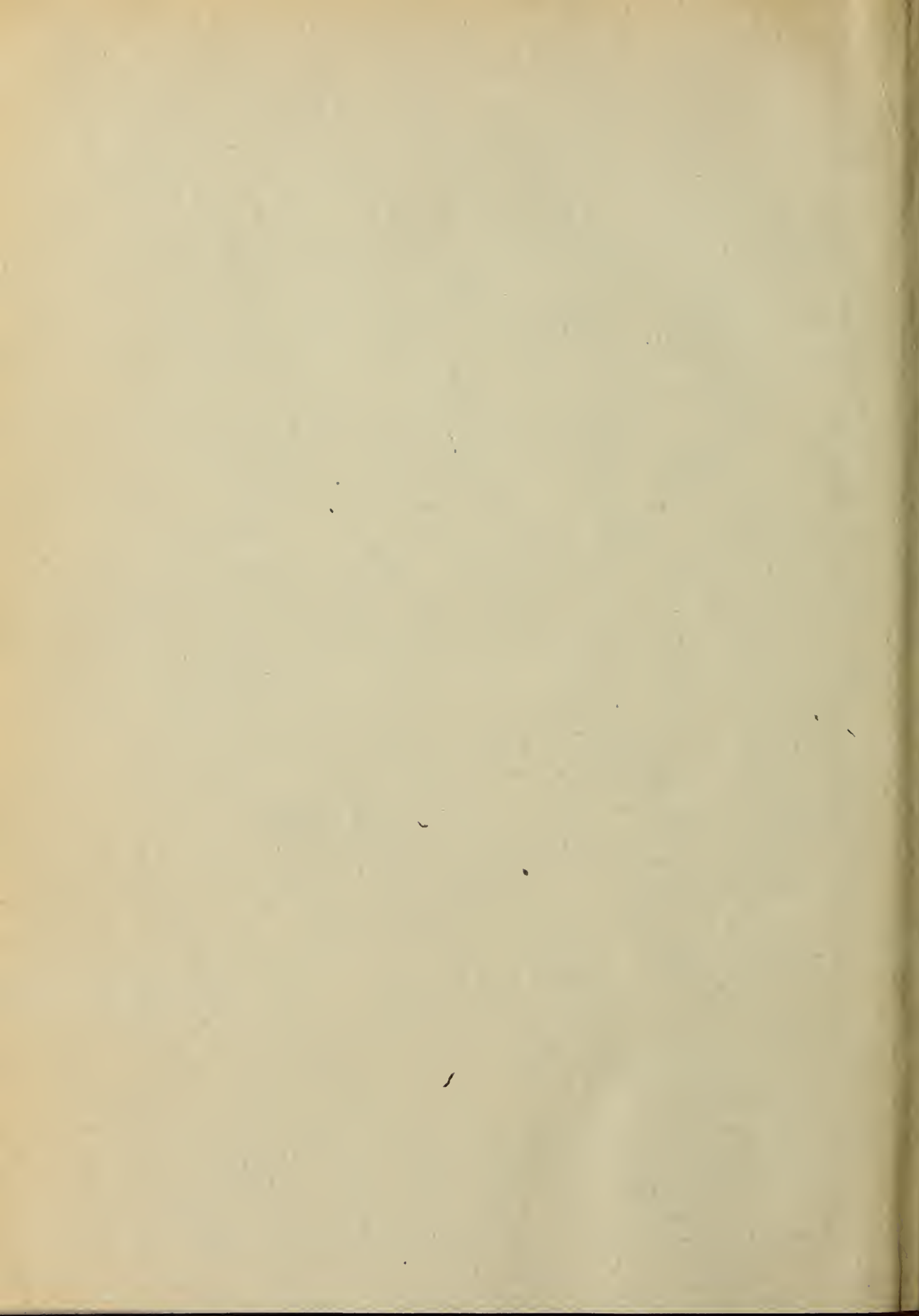
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